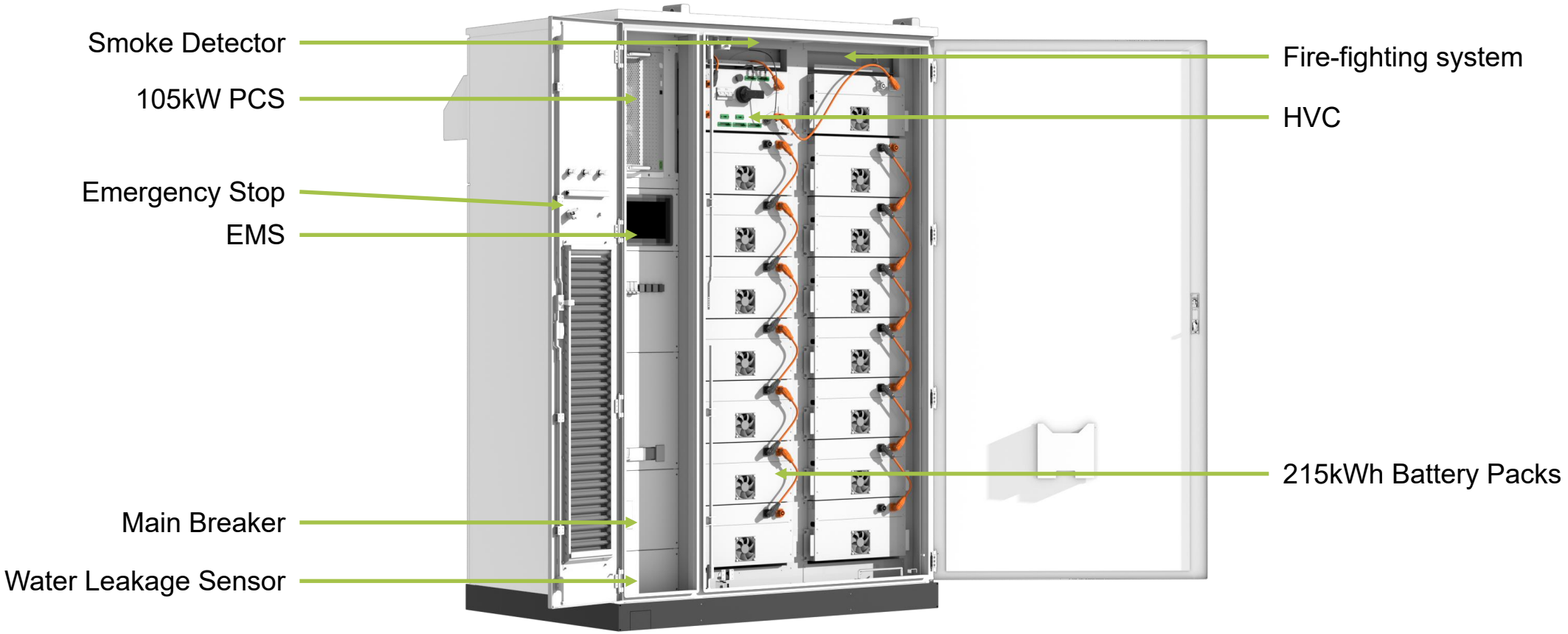
CESS-105K215AL

C&I Solution

Provided by HANCHU ESS

What is CESS-105K215AL?

This outdoor energy storage cabinet integrates battery packs, PCS, HVC, EMS, environment control and fire-fighting system all together. It supports max. 20 cabinets on-grid parallel connection, max. capacity is 2MW/4MWh.



What are the scenarios?

It matches various C&I scenarios and supports self consumption, peak-valley arbitrage (timing mode), peak-valley strategy, dynamic capacity increase and backup power guarantee.

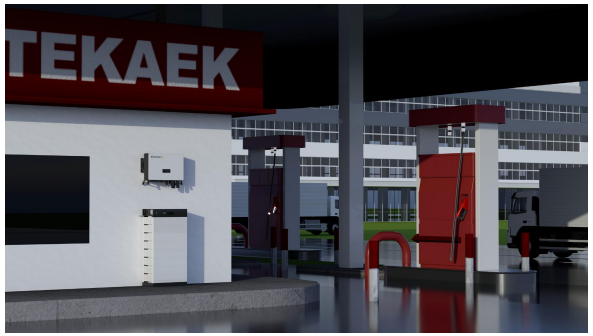
Office Building

School

Supermarket

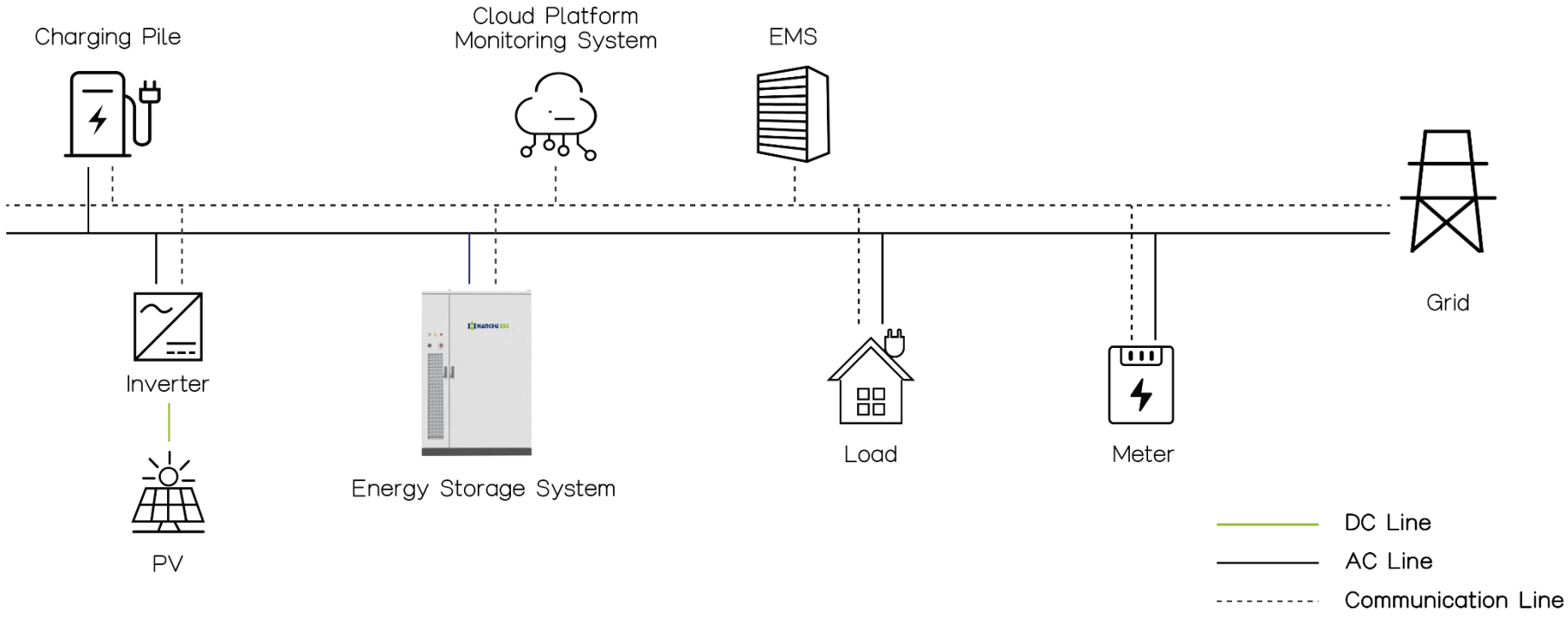
Factory

Farm



Gas/EV charger Station

What is the solution?

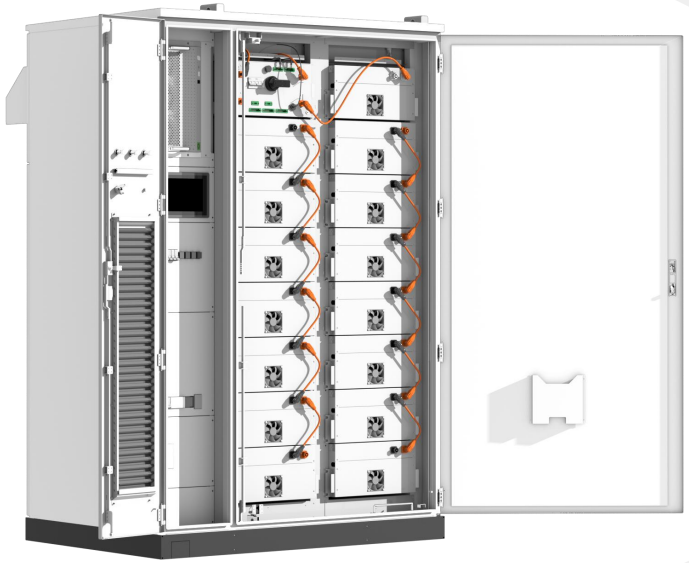


DC Parameter	
Rated Battery Capacity	215kWh
Rated System Voltage	768Vdc
Battery Type	LFP(LiFePO4)
Max. charge/discharge current	140A
AC Parameters	
Rated AC Power	105kW
Rated Grid Voltage	400V 3P4W
Rated Grid Frequency	50Hz
Total Harmonic Distortion of Current (%)	<3%(Rated Power)
Power Factor	0.99
General Parameters	
Ingress Protection Degree	IP54
Operating Temperature	-30℃~50℃
Cooling	Smart air cooling (rated cooling capacity 3.2kW)
Altitude	3000m（Over 2000m derating）
EMS Communication Interface	Modbus TCP
Dimensions（WxDxH）	1500*1490*2348mm
Weight	Approx. 2500kg

What are the advantages of 215K cabinet?

Ultimate safety

Superior Performance



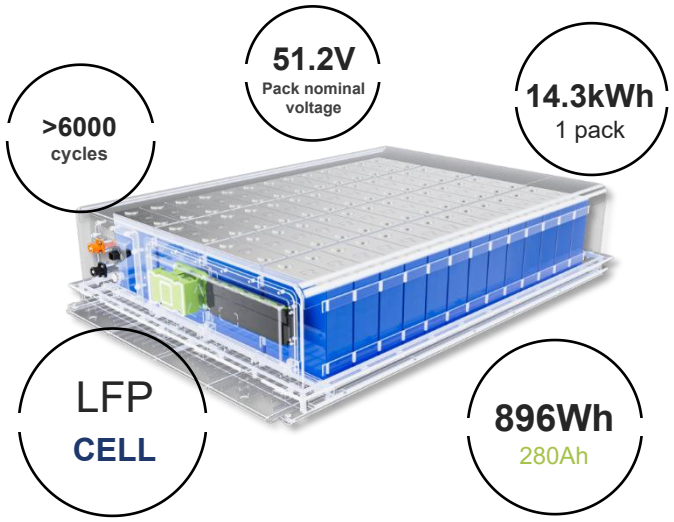
Flexible Matching

Easy Installation

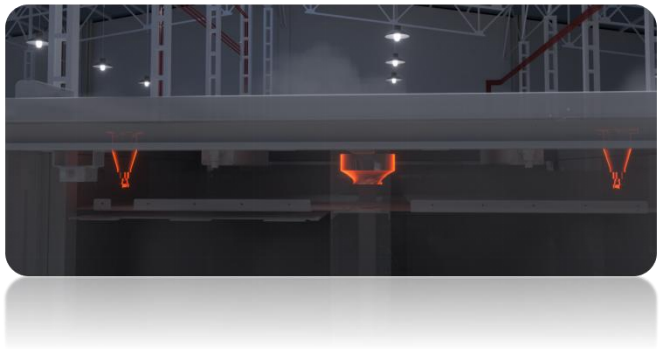
All-in-one design

Ultimate Safety

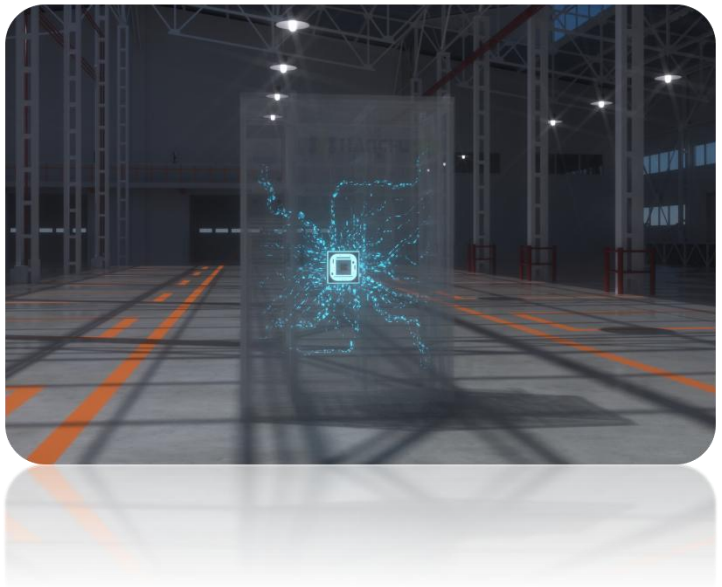
High quality battery



Fire fighting system
(perfluorohexanone)



Multiple protections by BMS



Superior Performance

Flexible millisecond level response time

Intelligent Air Cooling - Fan

Intelligent Air Cooling - Air conditioner

Flexible Matching (Max. 20 cabinets on-grid parallel)

All-in-one design

Easy Installation

- Transportation of the entire container, building blocks, fast delivery, greatly shortening the construction cycle.
- Compared with traditional products, it saves 20% of floor space.
- Integration of local controllers to achieve comprehensive management of equipment, unified communication interfaces and protocols.

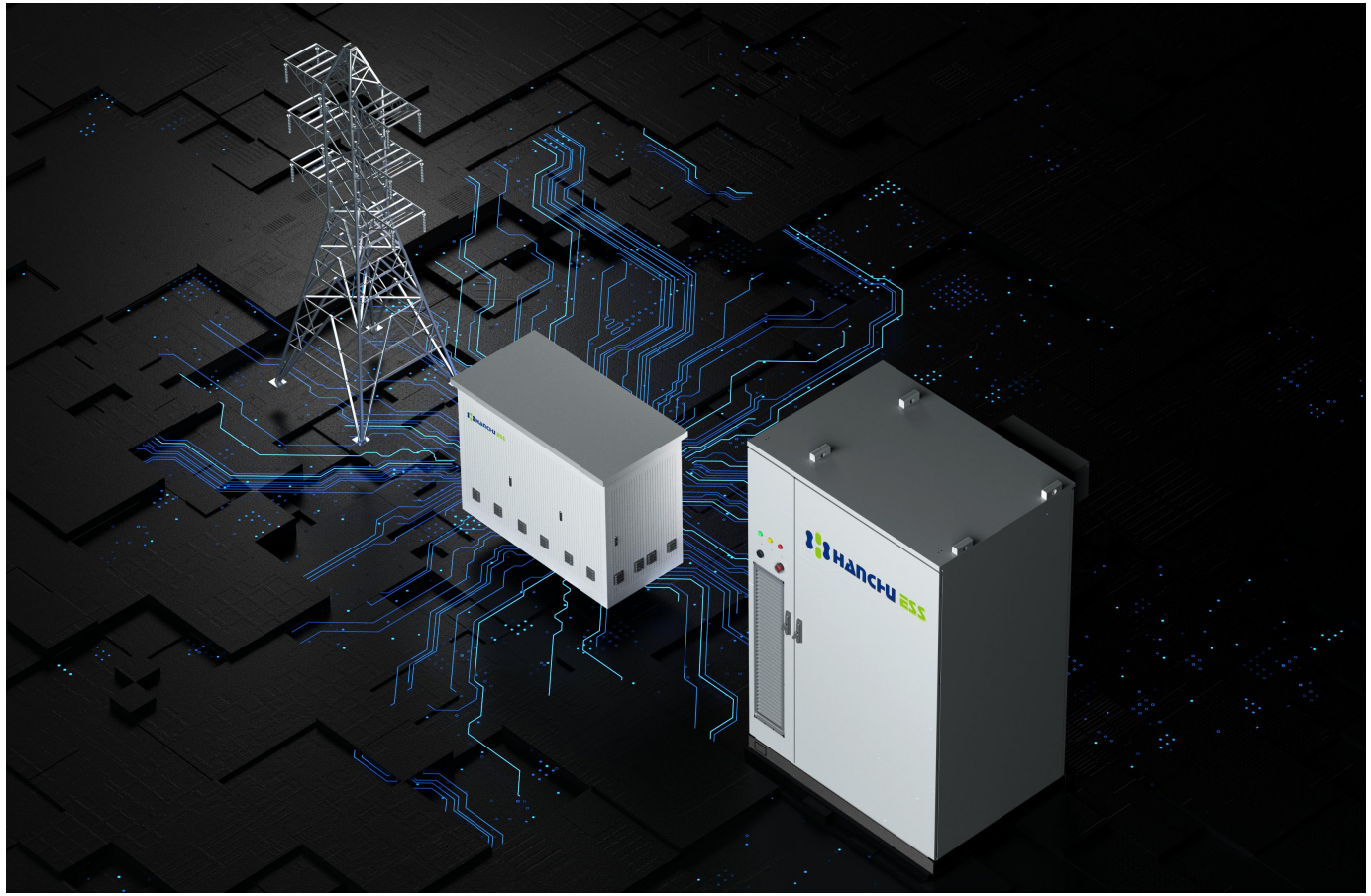
Power Control Strategy

Anti-reverse current control

- Ensure that power is only supplied to local loads when the energy storage is discharged and does not flow backwards into the grid, avoiding grid voltage fluctuations, equipment damage and fines for violations.

Peak-valley strategy

- By continuously monitoring fluctuations in load power, the system automatically charges and stores energy during off-peak periods and intelligently discharges and supplies power during peak periods, effectively preventing equipment overload and optimising grid operational efficiency.



Power Control Strategy

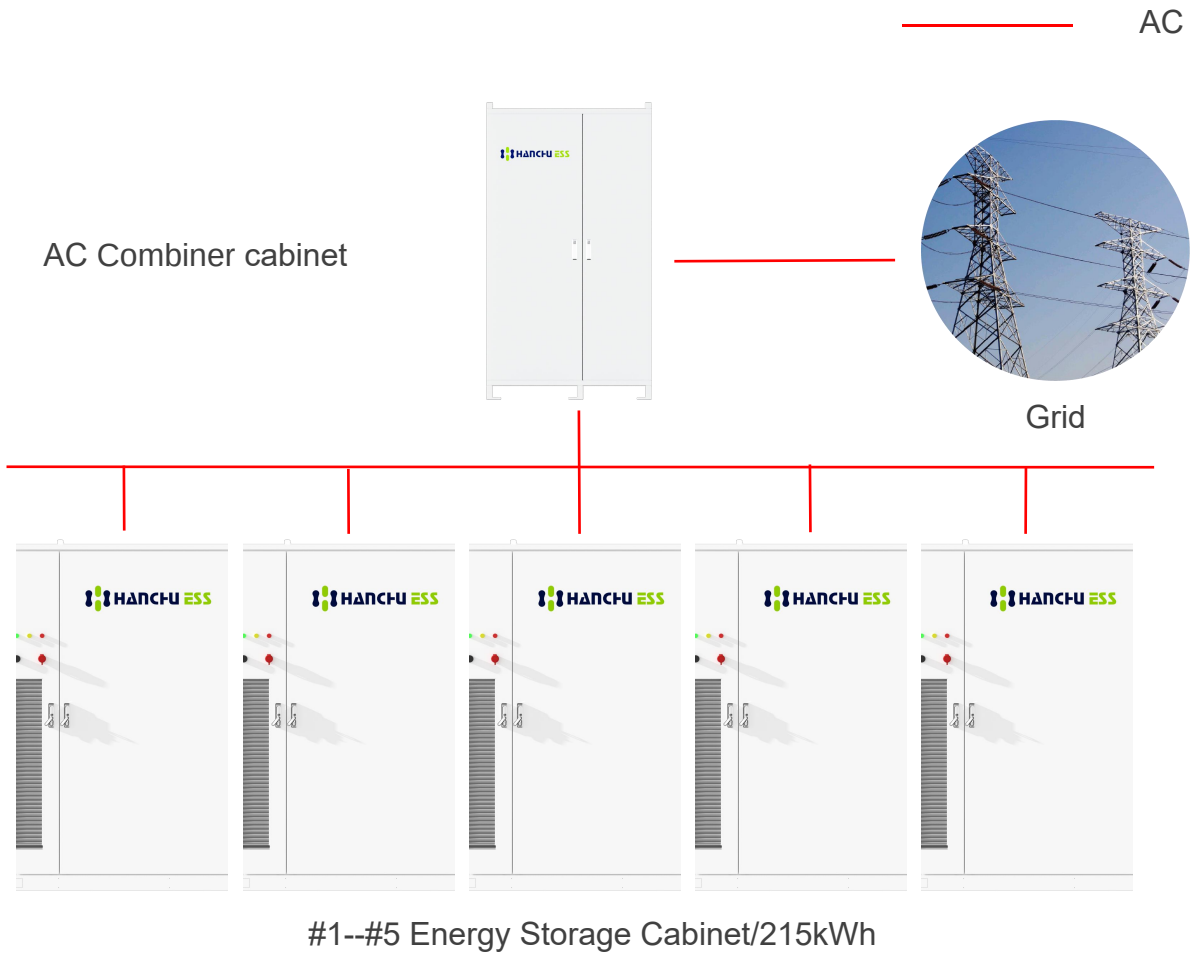
Static demand control

- By monitoring the transformer load in real time while the energy storage is charging, the charging power is dynamically limited to ensure that ‘charging power + real-time user load’ ≤ safe transformer capacity, thus avoiding overloaded transformer trips or demand charge penalties.

Dynamic demand control

- By monitoring transformer loads in real time, it can automatically call on energy storage and discharge to temporarily boost power supply capacity at times of peak demand, thereby meeting short-term overload demand without modifying the grid.

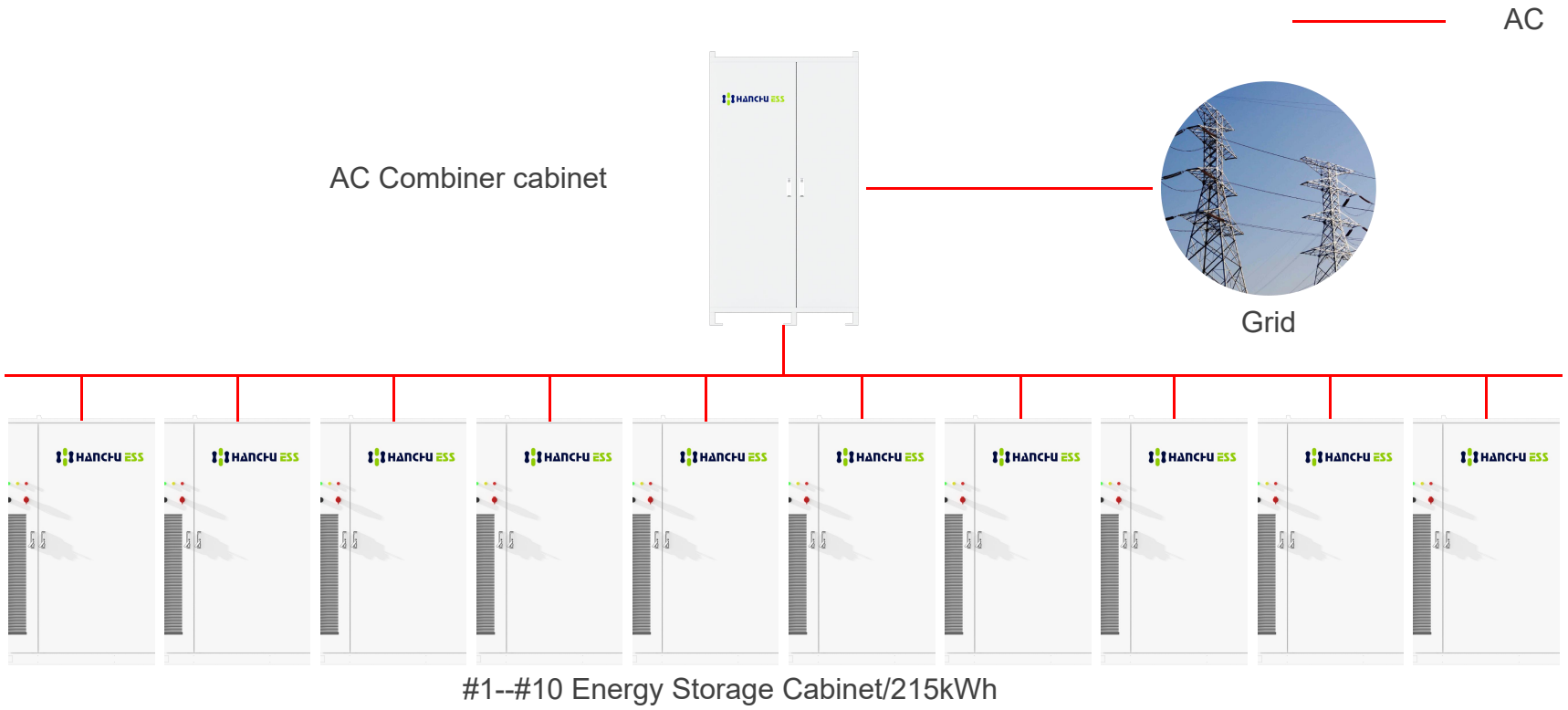
0.5MW/1MWh Solution



*Direct connection to customer-side 400V bus, saving investment in boosting equipment.

*System matching can be selected according to the actual power consumption scale.

1MW/2MWh Solution



*System matching can be selected according to the actual power consumption scale.

Parallel Configuration

System configuration without off-grid switching function:

No.	Equipment	Specification/ Model	System				
			105kW	210~315kW	420~525kW	630~840kW	945~1260kW
			215kWh	430~645kWh	860~1075kWh	1505~1720kWh	1935~2580kWh
1	Energy Storage Cabinet	CESS-105K215AL	1pcs	2~3pcs	4~5pcs	7~8pcs	9~12pcs
2	Anti-reverse current meter	ADL400	1pcs	1pcs	1pcs	1pcs	1pcs
3	CT	secondary side output of 5A CT accuracy of 0.5%	3pcs（≥200）	3pcs（≥800）	3pcs（≥1000）	3pcs（≥1500）	3pcs（≥2500）
3	AC Combiner cabinet	800A	-	1pcs	-	-	-
		1250A	-	-	1pcs	-	-
		1600A	-	-	-	1pcs	-
		2500A	-	-	-	-	1pcs

Note:

- 100~500kW can work off-grid, requiring manual switching.
- Above 600kW, it is can not work off-grid.
- AC combiner cabinet excluding STS.
- The CT is selected based on the maximum current at the Point of Common Coupling (PCC).

Parallel Configuration

System configuration with off-grid switching function:

No.	Equipment	Specification/ Model	Size	System	
				105~315kW	420~525kW
				430~645kWh	**860~1075kWh**
1	Energy Storage Cabinet	CESS-105K215AL	1500x1490x2348mm（WxDxH）	1~3pcs	4~5pcs
2	Anti-reverse current meter	ADL400	-	1pcs	1pcs
3	CT	secondary side output of 5A CT accuracy of 0.5%	-	3pcs（≥200）	3pcs（≥800）
2	AC Combiner Cabinet-S	800A, 500STS	800x800x2200mm（WxDxH）	1pcs	-
		1250A, 500STS*2	1000x800x2200mm（WxDxH）	-	1pcs

Note:
Can automatically perform and seamlessly switch off-grid work.
The CT is selected based on the maximum current at the Point of Common Coupling (PCC).

Typical Application Scenarios

Dynamic capacity increase

- Energy storage systems can meet the energy needs of the loads by effectively charging them during periods of high power usage when power demand exceeds transformer capacity. This approach helps to reduce costs associated with transformer usage, minimise investment in transformers and shorten expansion cycles.

Monitoring

Grid

CESS-105K215AL

CESS-105K215AL

CESS-105K215AL

Factory/office building/hotel/hospital and other industrial and commercial loads

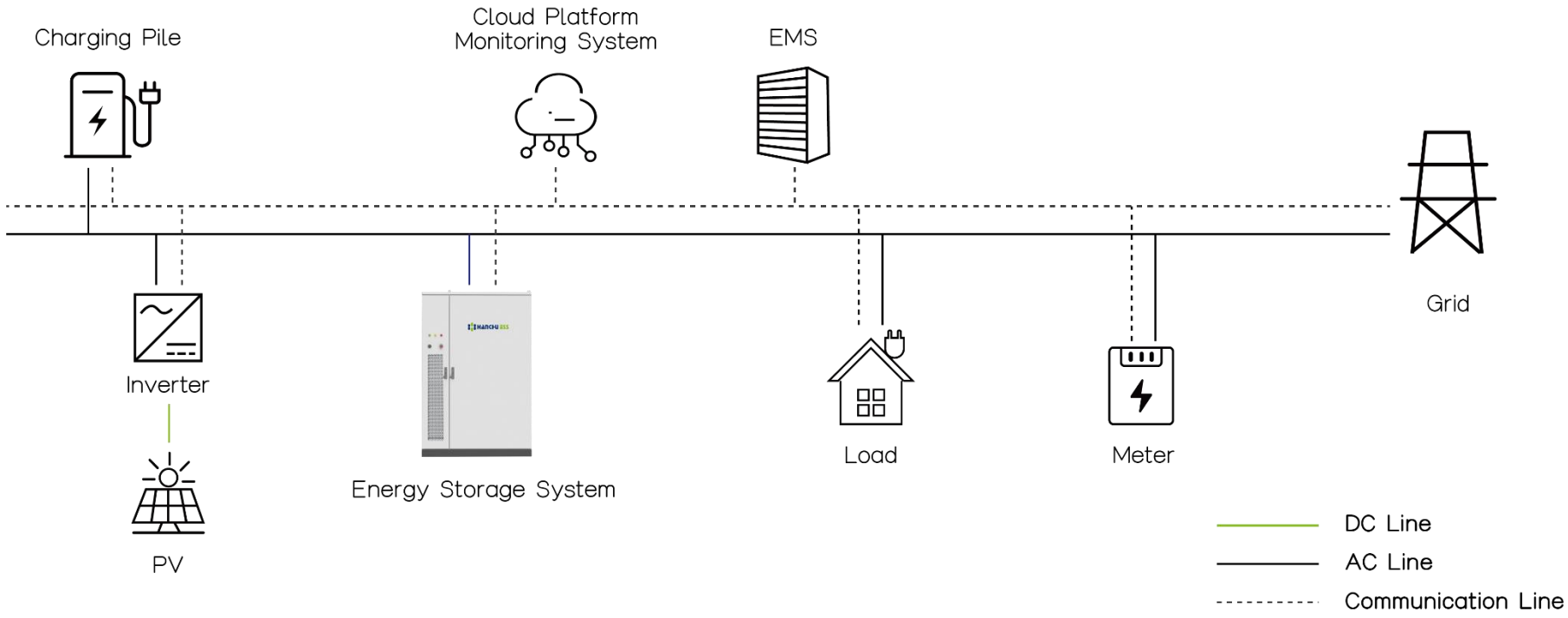
AC

Com

Typical Application Scenarios

Self-consumption

Photovoltaic power generation is prioritised to supply real-time loads, with excess energy stored in energy storage systems. When power generation is insufficient, stored energy is released to continue supplying power, forming a closed loop of ‘power generation-energy storage-load’.

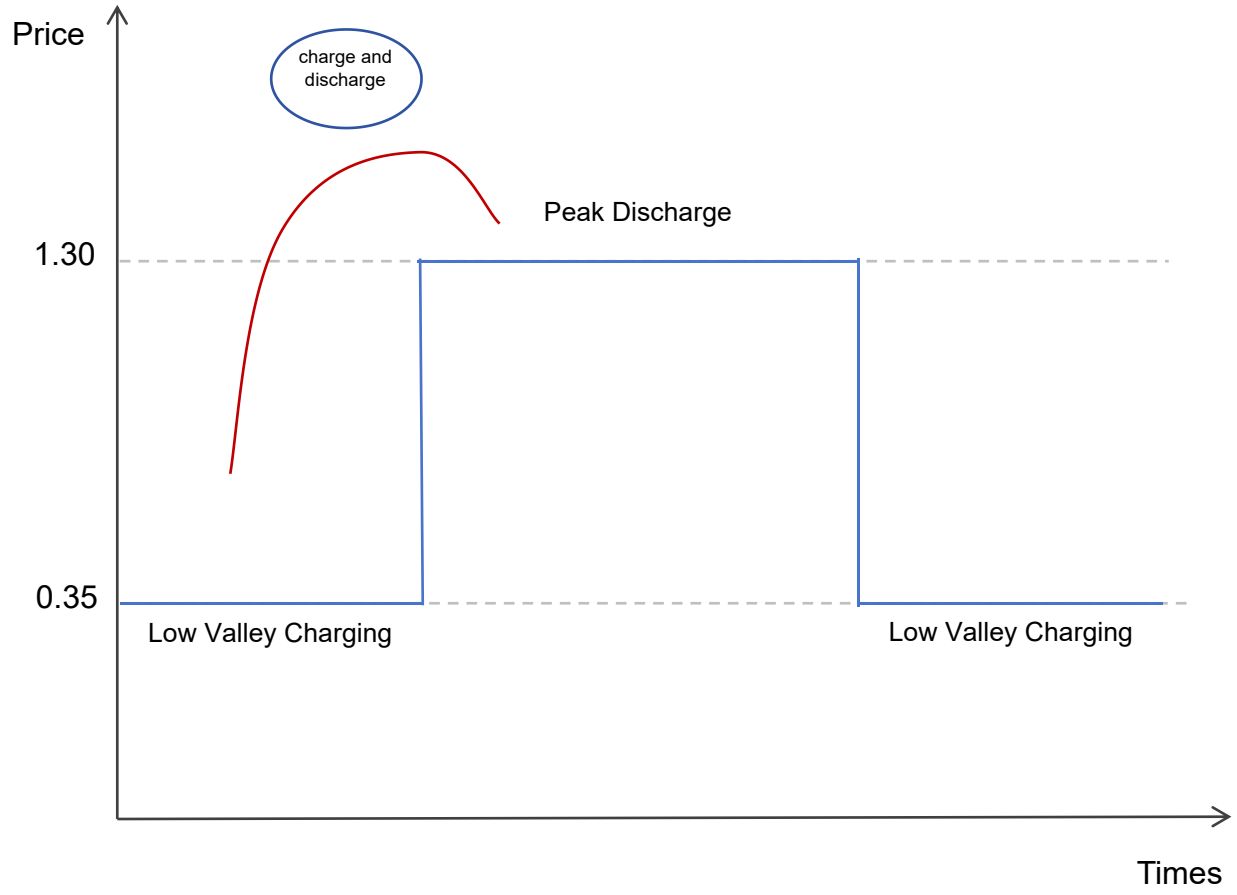


Note: The load and PV power cannot be shown in the monitoring system now.

Typical Application Scenarios

Peak-valley arbitrage (Timing mode)

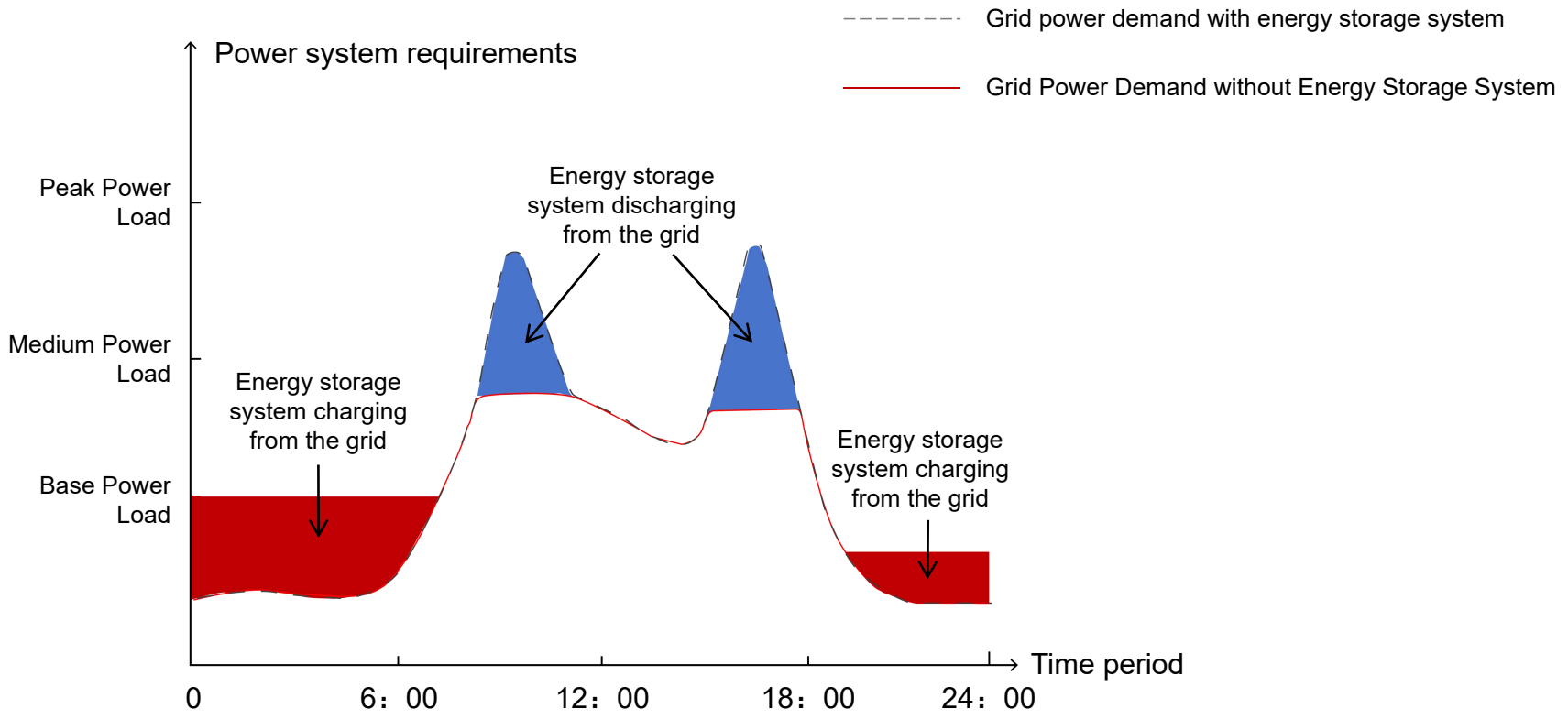
Peak-valley arbitrage models earn profits by charging during off-peak hours and discharging during peak hours to take advantage of price differences.



Typical Application Scenarios

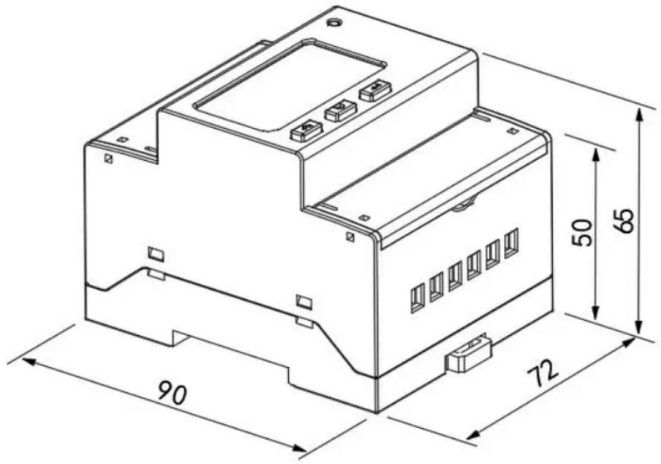
Peak-valley strategy

Dynamic optimisation of charging and discharging behaviours through real-time monitoring of load power. When the system monitors a sudden increase in load that causes the active power of the meter to exceed the set value, charging is immediately suspended to avoid excess demand charges and equipment overload, which is suitable for manufacturing scenarios with large load fluctuations.



Meter & CT

The anti-reverse current meter installed at the PPC, matching CT primary current needs to be greater than the maximum current of the PPC



Acrel meter
Model: ADL400

CT Ratio (A)
200 / 5
300 / 5
500 / 5
800 / 5
1000 / 5
1500 / 5
2000 / 5
2500 / 5

THANKS!