

AlphaESS

Introduction of Storion-G2-H50

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Date: 2024.9.9



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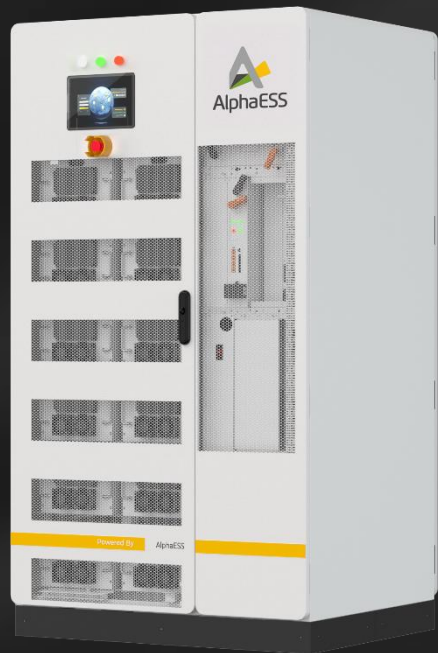
04 Additional Information



Part 01

Product Introduction

Overview of the 30~50kW C&I products



Storion-H29/30
29/30 kW system
34.56 ~ 55.29 kWh (1C)
64.51 ~ 96.76 kWh (0.5C)



Storion-G2-H30/50
30/50 kW system
55.29 / 110.58 kWh (1C)
104.83 / 209.66 kWh (0.5C)



Storion-G2-H30/50-O
30/50 kW outdoor system
55.29 / 110.58 kWh (1C)
96.77 / 193.54 kWh (0.5C)

Overview of the Storion-G2-H30/50

Expansion Battery Cluster (Optional)

- Fire protection
- Battery
- BMS
- HV-box



System Cabinet (ALPBEC-105)

- HV-box
- SCADA screen
- EMS
- Fire protection
- Battery

Three-phase hybrid inverter

Overview of the Storion-G2-H30/50



Outdoor version G2-H30/50-O



Indoor Version G2-H30/50

	M7790-S		M38210-SC	
Storion-G2-H30/50	8 pcs	55.29 kWh (1 cluster)	13 pcs	104.83 kWh (1 cluster)
Storion-G2-H30/50-O	8 pcs	55.29 kWh (1 cluster)	12 pcs	96.77 kWh (1 cluster)

Hybrid Inverter



	INV-G2-H30	INV-G2-H50
PV Voltage Range	135~850 V(MPPT 200~850 V, 4 MPPTs)	135~850 V(MPPT 200~850 V, 4 MPPTs)
Max. Input Power	45 kW	60 kW
Battery Voltage Range	135~750 V	135~750 V
Max. Battery Current	100 A	100 A
Rated Output Power	33 kVA (110% overload)	50 kVA (110% overload)
Pmax Input(Grid+Load)	36 kVA	60 kVA
Rated Grid Voltage	3L / N / PE 220 V / 380 V; 230 V / 400 V	
Frequency	50 / 60 Hz	
UPS Switching Time	< 20 ms	
European efficiency	98.3%	
Weight	72 kg	
Dimensions (W x D x H)	800×620×300 mm	
IP Protection	IP 65	
Operating Temperature Range	-30~60 °C (> 45°C PCS derating)	
Standby consumption	< 15 W	

Battery Module

Battery Introduction

M7790-S

Battery Module	M7790-S
Rated Voltage	76.8V
Nominal Capacity	6.9kWh
Operating Voltage	72~84.48V
Charge/Discharge Rate	1C
Weight	64 kg
Dimensions (W x D x H)	326 x 654 x 250mm
IP Protection	IP21
System Cycle Life	6000
Operating Temperature Range	-10 ~ 50 °C
Optimal Temperature	20 ~30 °C



Battery Module

Battery Introduction

M38210-SC

Battery Module	M38210-SC
Rated Voltage	38.4V
Nominal Capacity	8.064kWh
Operating Voltage	36~32.24V
Charge/Discharge Rate	0.5C
Weight	64 kg
Dimensions (W x D x H)	325 x 658 x 232mm
IP Protection	IP21
System Cycle Life	6000
Operating Temperature Range	-10 ~ 50 °C
Optimal Temperature	20 ~30 °C

System Cabinet (Indoor)

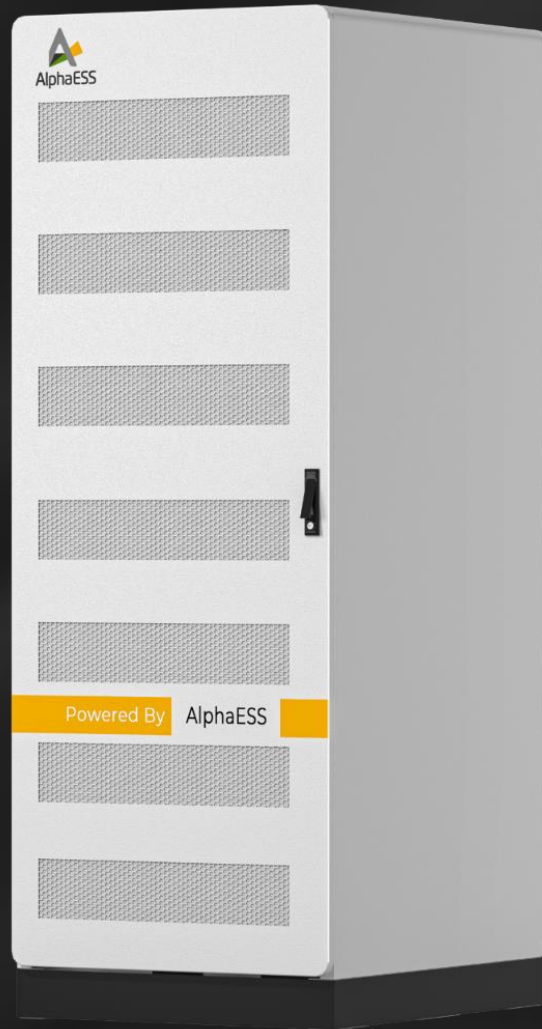


System Cabinet Introduction ALPBEC-105

	M7790-S	M38210-SC
Module Number	8 pcs	13 pcs
Cluster Capacity	55.29 kWh	104.83 kWh
Max. Charging/Discharging Current	90A	105 A
Weight without BAT	~280 kg	
Fire-Fighting System	Smoke detect	
EMS	EMS 4.0	
HMI	SCADA	
Dimensions (W x D x H)	900×850×2050 mm	
IP Protection	IP 20	

Expansion Battery Cluster (Indoor)

Expansion Battery Cluster (Optional) ALPBC-105



	M7790-S	M38210-SC
Battery Number	8 pcs	13 pcs
Cluster Capacity	55.29 kWh	104.83 kWh
Max. Charging/Discharging Current	90A	105 A
Weight without BAT	~196 kg	
Fire-Fighting System	Smoke detect	
Dimensions (W x D x H)	740×900×2160 mm	
IP Protection	IP20	
All-in-one Design	With batteries, BMS, Fire protection	

System cabinet (Outdoor)

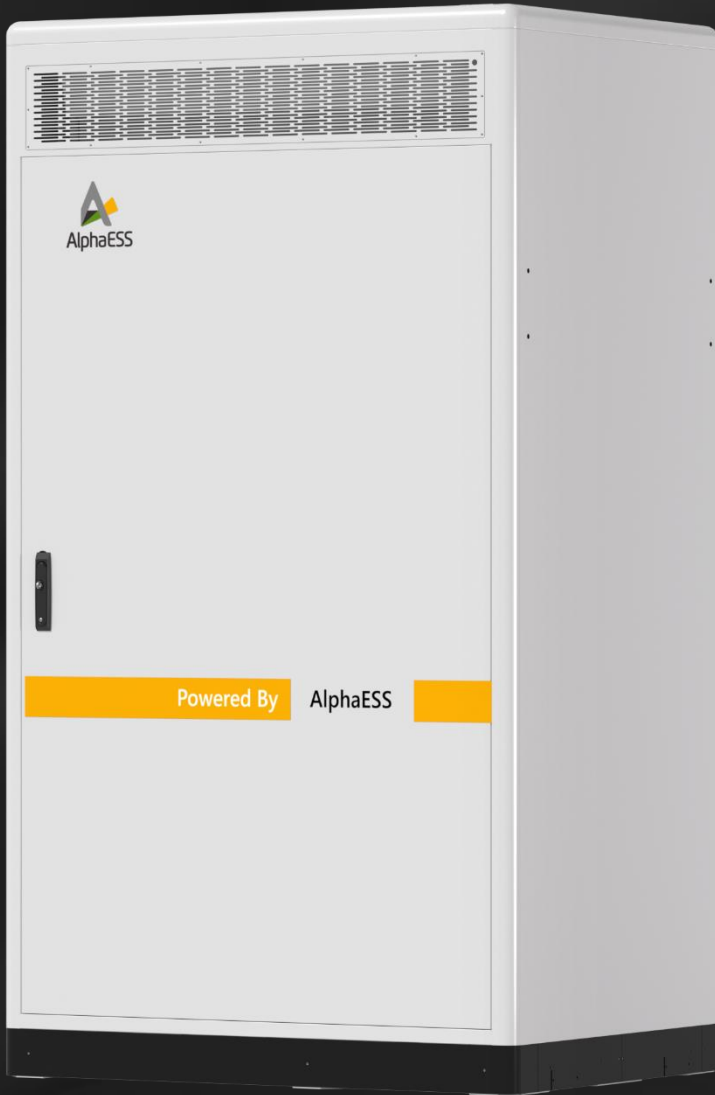
System Cabinet Introduction ALPBEC-105-O



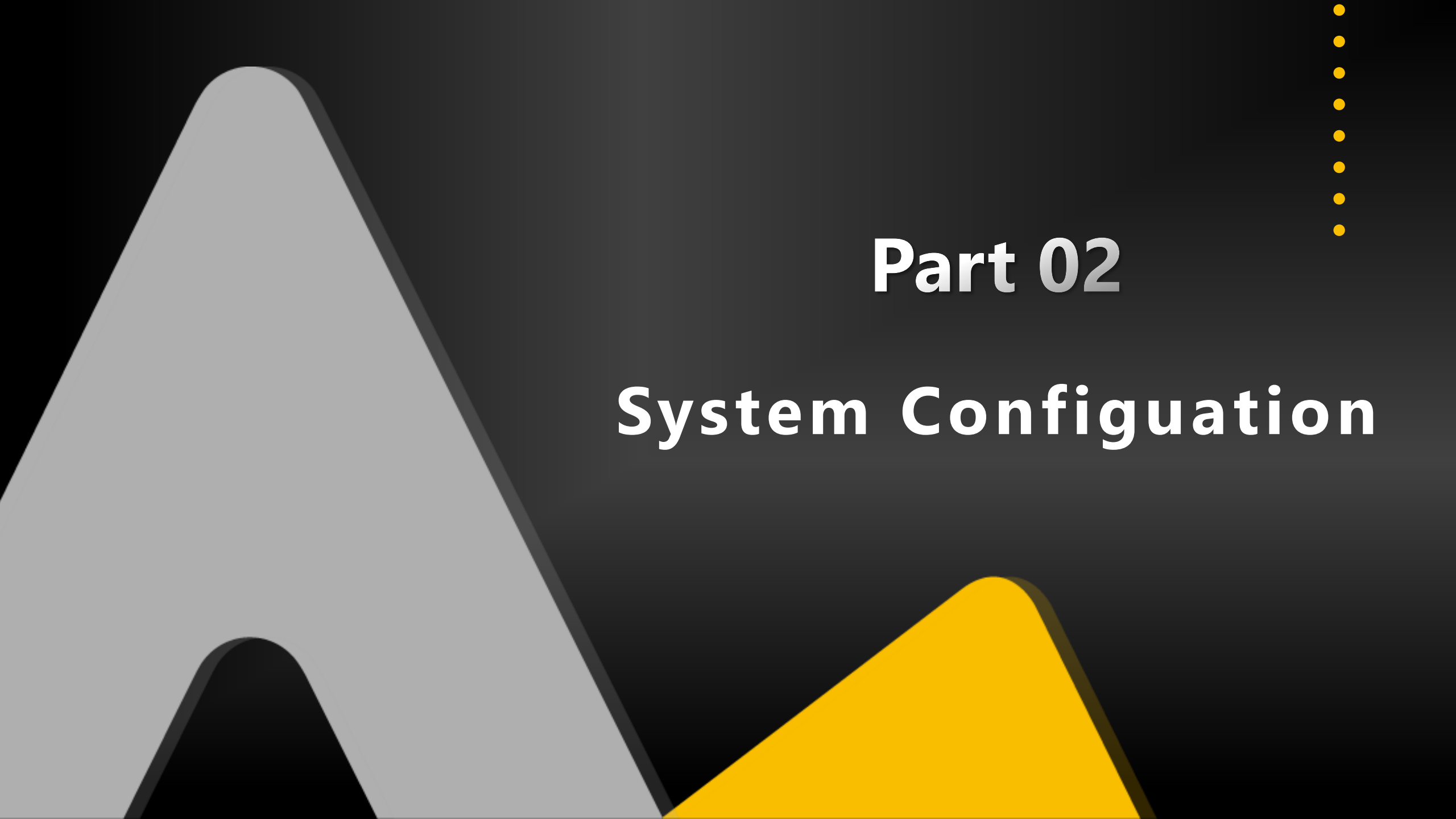
	M7790-S	M38210-SC
Battery Number	8 pcs	12 pcs
Cluster Capacity	55.29 kWh	96.77 kWh
Max. Charging/Discharging Current	90A	105 A
Weight without BAT	~221 kg	
Fire-Fighting System	Aresol & Smoke detect	
EMS	EMS 4.0	
HMI	SCADA	
Dimensions (W x D x H)	(1200+300)×900×2160 mm	
IP Protection	IP 55	
All-in-one Design	With batteries, PCS, DC/DC, STS,EMS and HVAC(Heating, Ventilation, and Air Conditioning)	

Expansion Battery Cluster (Outdoor)

Expansion Battery Cluster (Optional) ALPBC-105-O



	M7790-S	M38210-SC
Battery Number	8 pcs	12 pcs
Cluster Capacity	55.29 kWh	96.77 kWh
Max. Charging/Discharging Current	90A	105 A
Weight without BAT	~196 kg	
Fire-Fighting System	Aresol & Smoke detect	
Dimensions (W x D x H)	1200×900×2160 mm	
IP Protection	IP 55	
All-in-one Design	With batteries, BMS, Fire protection	



Part 02

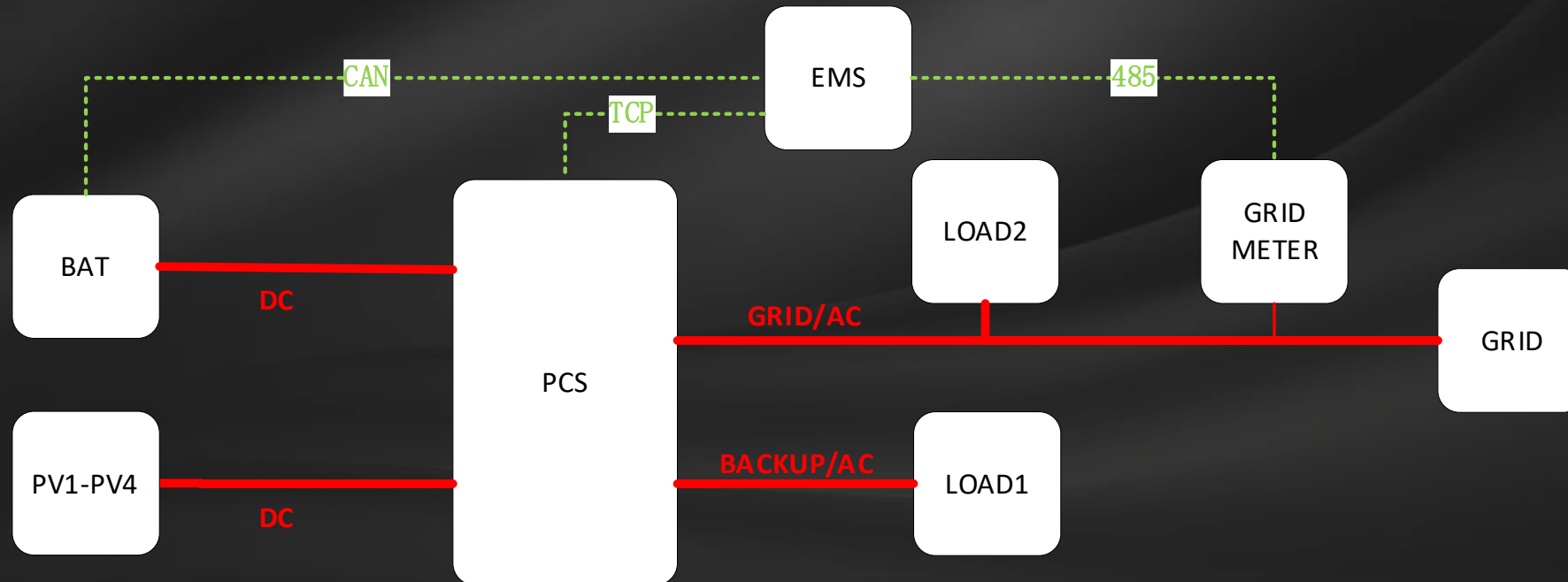
System Configuration

DC Coupled

Power supply of AC port is grid, STS is build-in, UPS switching within 20ms.

On-grid mode: Grid+Backup load work

Off-grid mode: Only backup load work

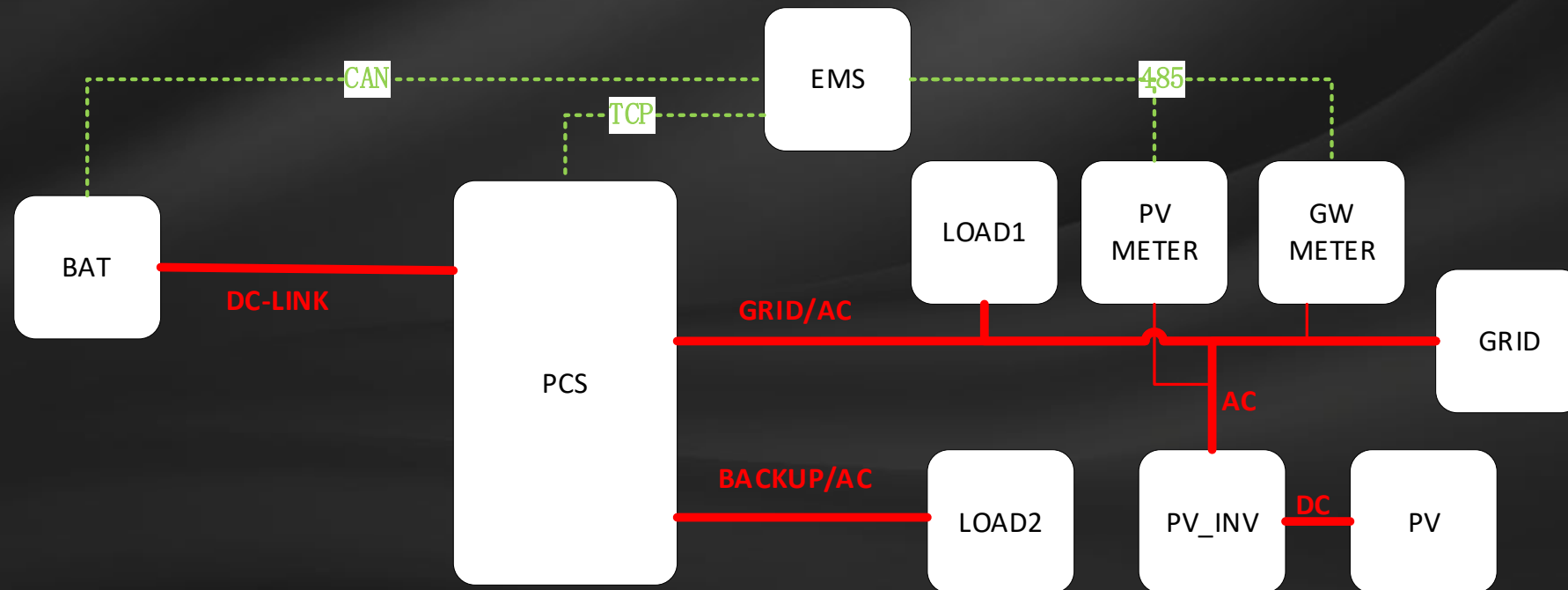


AC Coupled

Power supply of AC port is grid, STS is build-in, UPS switching within 20ms.

Existing PV inverters are connected in grid port

PV inverters stop working under off-grid mode

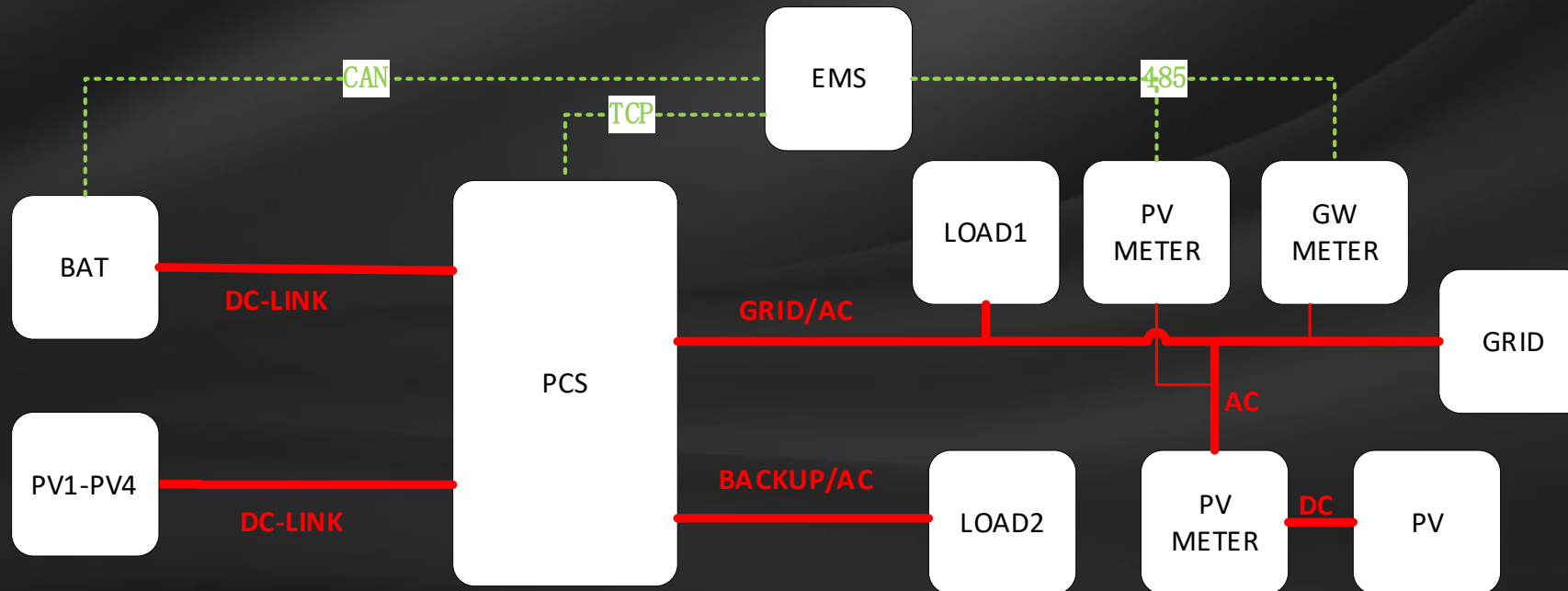


Hybrid Coupled

Power supply of AC port is grid, STS is build-in, UPS switching within 20ms.

Existing PV inverters are connected in grid port

PV inverters stop working under off-grid mode



Extra ATS required, all loads connect in backup port of hybrid inverter





Part 03

Product Functions

Temperature Monitor

Modular heat dissipation design

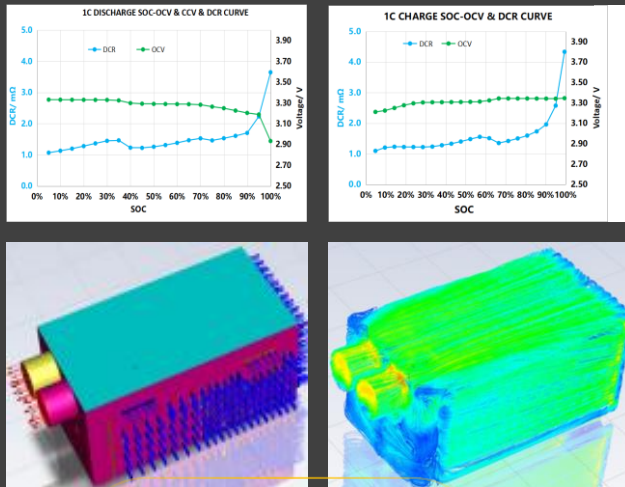
- Simulation&test verification
- Parallel air ducts
- Fan-forced convection

System air duct design

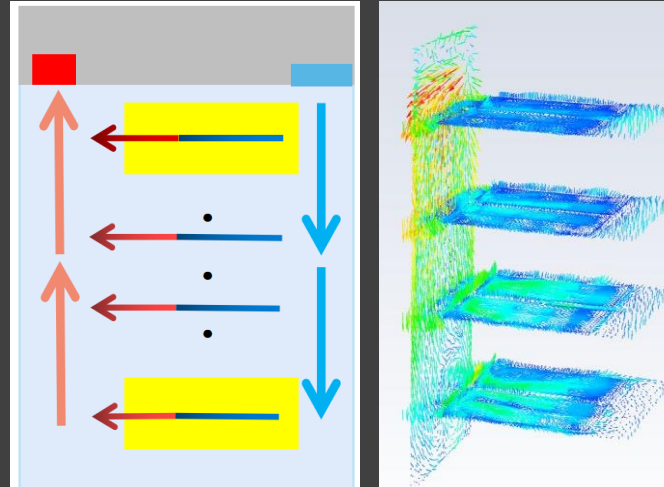
- Air conditioner in outdoor cabinet
- Parallel duct design
- Adapt to various operation conditions

System temperature data

- 1C Max temperature: 36°C
- System temperature difference ≤ 5



Module Cooling Path



System Cooling Path

AlphaESS Your Smart Energy

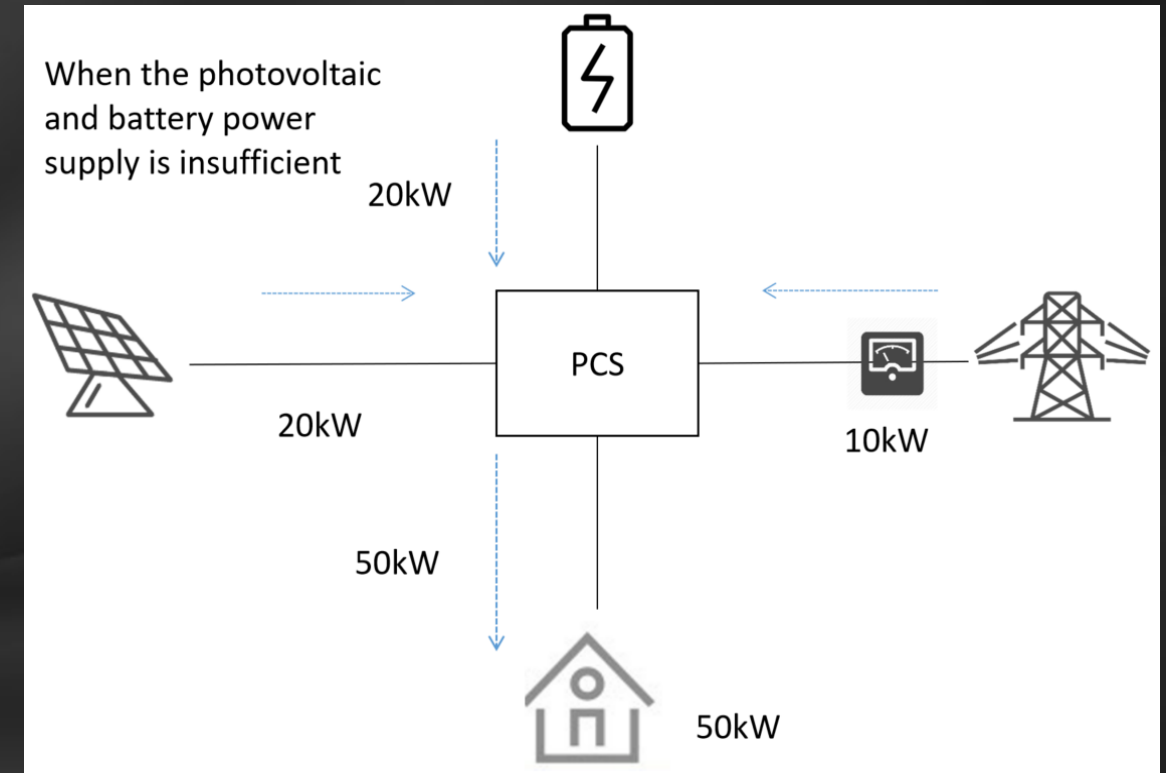
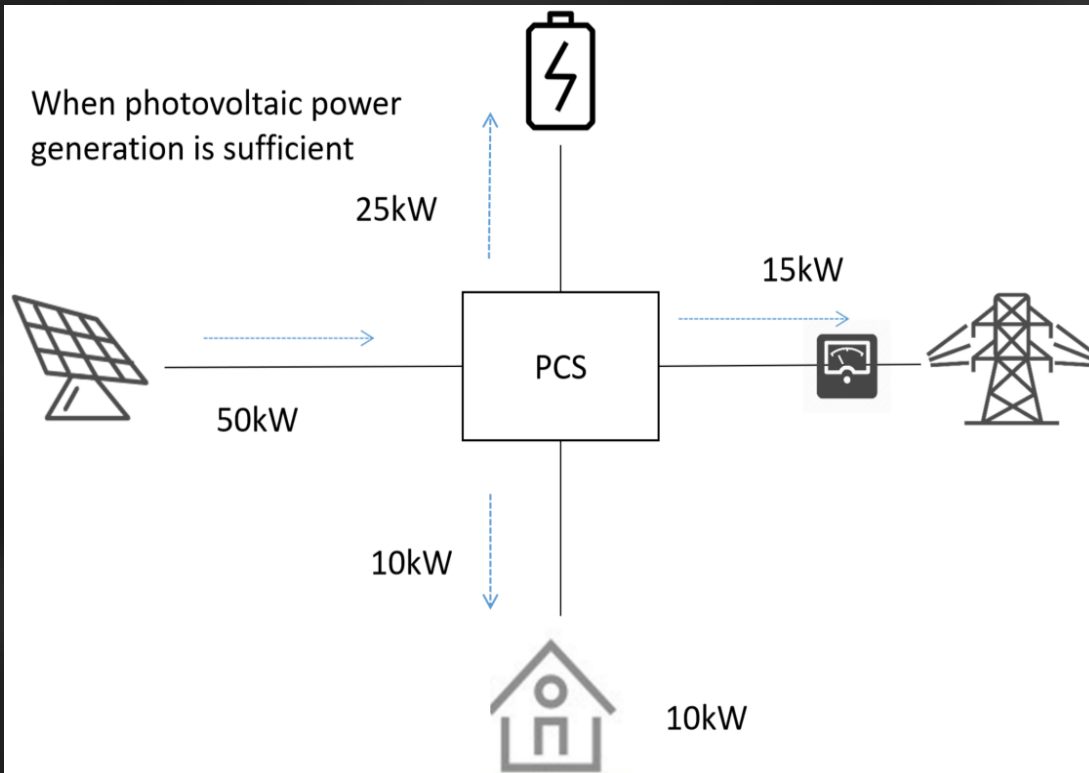


System Temperature Data

[illegible]

Strategy modes

Self-sufficient mode



Load > Battery > Grid feed-in
If users set the maximum feed-in power, PCS will restrict the PV power.

When PV power is insufficient, battery and grid will supply power for load

During setting period, PV power is prioritized to ensure that the battery is charged at the set power until the cut-off SOC.

If PV power is not sufficient, system will receive power from grid.

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Users can set the upper and lower limit of power from grid, PCS will allocate the power of PV and battery to make sure power from grid is always within this range.

AlphaESS Your Smart Energy

Strategy modes

SOC Calibration

control strategy - [channel1]

Single/Parallel Setting | SOC calibrate | time sharing strategy | Diesel engine | Graded load configuration

• undervoltage charging

☒ Undervoltage charging enable Undervoltage charging power (kW):

SOC calibration

☐ SOC calibration power (kW):

Manual SOC Calibration

☐ Manual SOC calibration ☐ Manual SOC calibration cancel

• Automatic SOC calibration

☐ Automatic SOC calibration

☒ Time period enable 1 1:00:00 - 2:00:00 ☒ Time period enable 2 2:00:00 - 2:02:00

☒ Time period enable 3 0:00:00 - 0:00:00 ☐ Time period enable 4 0:00:00 - 0:00:00

Write

Exit

Once this function is activated, the system will start to charge batteries in maximum power.

If PV power is insufficient, grid will supply the rest of power needed.

Users can also set the time period for automatic SOC calibration every 2 weeks.



Part 04

Additional Information

Common Functions

Functions	Development Time
5 units in parallel (On-grid)	September 2024
3 units in parallel (Off-grid)	Developing
Modbus TCP	August 2024
API Protocol	September 2024

Improvement of Design

- **High integration:** built-in battery modules, HV Box, PCS, DCDC, EMS and other components
- **Convenient maintenance:** the front and back door design, system can be maintained from both sides
- **All-in-one design** maximizes the utilization rate of space and increases the utilization rate of space by 30%



THANKS

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