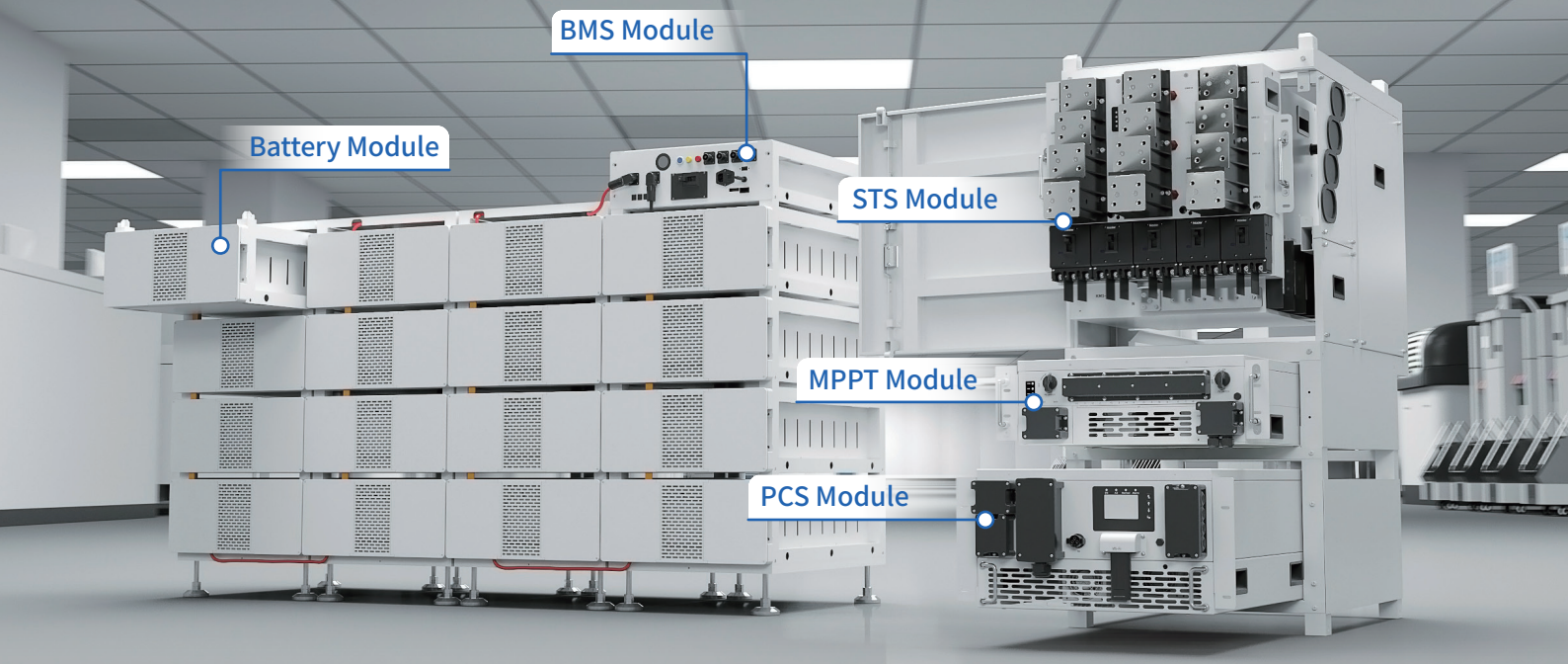
125KW-2.5MW C&I ESS SOLUTION

Featuring PCS, MPPT, and STS modules with integrated EMS functionality



Fast & Reliable Switching

- **Seamless Switching :**
STS module can switch between on-grid, off-grid, and diesel modes in <10ms.
- **Independent High-Power Paths :**
Diesel, load, and grid connections support 500kW.

Advanced Energy Storage

- **Extended Backup :**
Up to 32 hours of backup with 16 racks per PCS.
- **Smart Balancing:**
Independent BMS ensures optimal charge distribution and extends battery life.

Intelligent Control

- **Integrated EMS :**
Supports zero-export and time-of-use charging/ discharging.
- **Easy Management:**
Color touchscreen for local or remote cloud adjustments.

Efficient PV Integration

- **High PV Input :**
Maximum 200kWp PV module connection with 8 MPPT channels, 40A per MPPT.

Rugged & Reliable

- **IP65 Protection :**
PCS and MPPT modules feature IP65-rated protection.
- **Peak Power Support :**
200% of rated power for 15s.
- **LFP battery:**
BOS-B's robust design enhances the system's reliability.

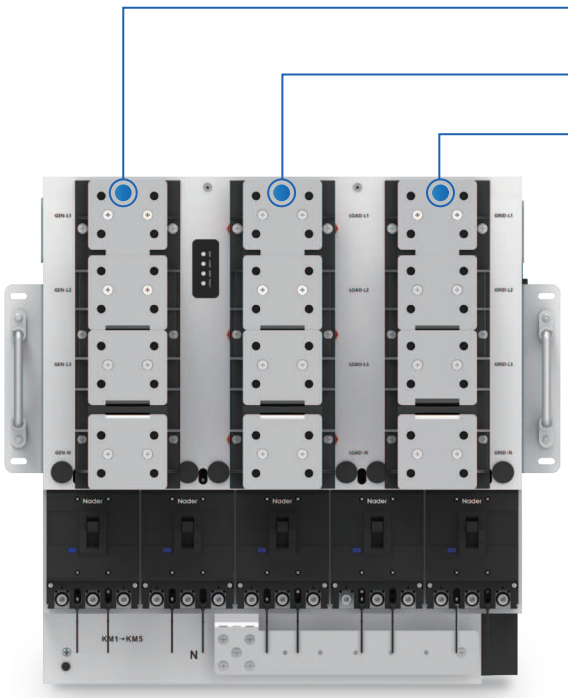
High Performance & Scalability

- **Powerful Capacity :**
PCS offers 125kW, expandable up to 2.5MW.
- **Large Energy Storage:**
BOS-B Pro battery supports 257 kWh per cluster, supporting up to 16 packs per PCS.
- **High Efficiency :**
PCS reaches 98.5% efficiency, MPPT exceeds 99%.

125kW-2.5MW C&I ESS Solution

STS Module

Smoothly switch between on-grid, off-grid, and diesel generator modes with a switching time of less than 10ms. Each diesel, load, and grid connection is independent, with each path supporting 500kW. One STS module can connect to four 125kW PCS modules.



STS Module (500kW)

◎ Switching capacity of **500**kW.

◎ Enables smooth switching between on-grid, off-grid, and diesel generator modes.

◎ Switching time of less than **10ms**.



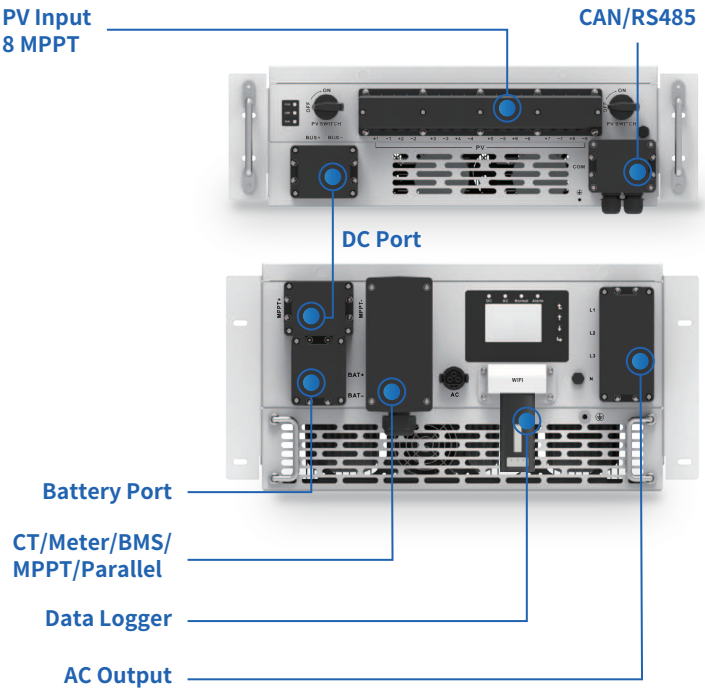
MPPT Module & PCS Module

MPPT Module (8 MPP Trackers)

◎ Maximum 200kWp PV module connection with 8 MPPT channels, **40A** per MPPT.

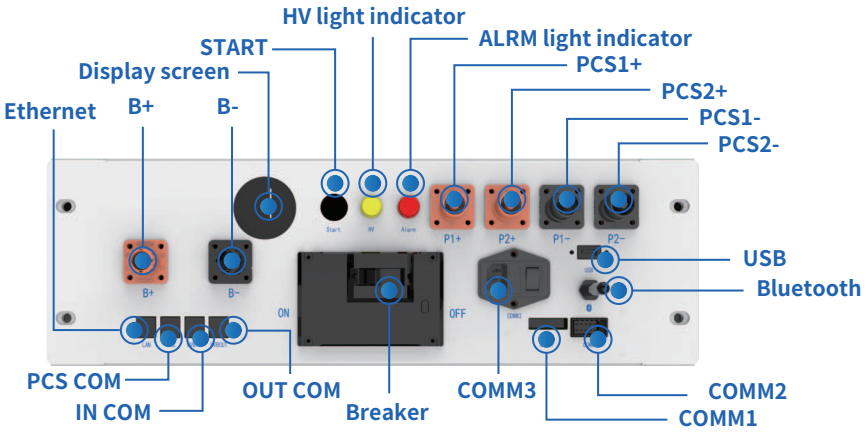
PCS Module (125kW)

◎ **200A** charge and discharge current.
◎ Maximum efficiency of **98.5%**.
◎ System rated power up to **2.5MW**.
◎ Supports instantaneous peak power up to 200% of rated power.
◎ Integrates zero-export and time-of-use control functions.
◎ Eliminating the need for additional EMS.



Battery Pack Accessories

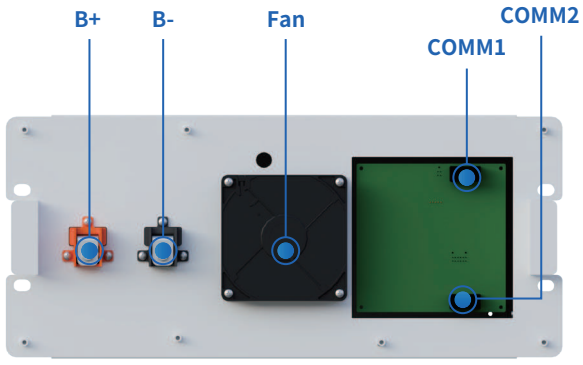
Model	BOS-B-PDU-2-A
Operating Voltage	200~1000Vdc
Nominal Charge/Discharge Current	180A
Operating Temperature	-20~60°C
Ingress Protection	IP20
AC Input Rating	220±10%VAC/2A
Details	788.6×526×167.2(W×H×D),32kg



◎ Ethernet:Features not yet developed.
◎ PCS COM:PCS COM battery communication terminal: used to output battery information to the inverter.
◎ IN COM:Connection position with previous BOS-B-PDU-2 communication OUT COM .
◎ OUT COM:Connection position with next BOS-B-PDU-2 communication IN COM.
◎ Breaker:It is used to manually control the connection between the battery rack and external devices.

◎ COMM3:The product must be connected to the auxiliary power input AC200~240V-3A-50~60Hz when used.
◎ COMM1:Emergency power-off triggered the interface. RS485-Enabled.
◎ COMM2:Communicative connection with the first battery module; and providing 12VDC power for the first battery module.
◎ Bluetooth:The mobile APP connects to the data acquisition rod of the energy storage system.
◎ B+:Battery common positive connection position (orange).
◎ B-:Battery common negative connection position (black).
Display screen:Display SOC and fault codes.
START:A start switch of 12VDC power inside the high-voltage control box.
◎ HV light indicator:High-voltage hazard indicator (yellow).
ALRM light indicator:Battery system fault alarm indicator (red).
◎ PCS1+:First PCS positive connection position (orange).
◎ PCS2+:Second PCS positive terminal connection position (orange).
◎ PCS1-:First PCS negative connection position (black).
◎ PCS2-:Second PCS negative connection position (black).
◎ USB:BMS upgrade port and storage expansion port.

Model	BOS-B-Pack16-A3
Nominal Capacity	314Ah
Nominal Energy	16.08kWh
Nominal Voltage	51.2Vdc
Nominal Charge/Discharge Current	180A
Ingress Protection	IP20
Operating Temperature(Charge)	0~55°C
Operating Temperature(Discharge)	-20~55°C
Storage Temperature	0~35°C
Details	795.9×526×274.2(W×H×D),126kg



◎ B+：Battery module positive pole (orange)
◎ B-：Battery module negative pole (black)
◎ Fan：Ventilation and heat dissipation.
◎ COMM1：Connection position of battery module communication and power supply input
◎ COMM2：Connection position of battery module communication and power supply output

Model	BOS-B-AP-A

This Accessories Package is desianed for use with the 125kW PCS, and primarily includes the following cables:
Positive PowerCable：1AWG_1000mm*1，1AWG_2500mm*1，1AWG_3000mm*1
Negative Power Cable：1AWG_240mm*1，1AWG_3000mm*1
PE Cable：10AWG_600mm*1

125kW-2.5MW C&I ESS Solution

MPPT Module	SUN-MPPT-L01-EU-AM8
PV String Input Data	
Max. PV Input Power (kW)	200
Max. PV Input Voltage (V)	800
Start-up Voltage (V)	200
MPPT Voltage Range (V)	180-750
Full Load MPPT Voltage Range（V）	450-750
Rated PV Input Voltage (V)	600
Max. Operating PV Input Current (A)	40+40+40+40+40+40+40+40
Max. Input Short-Circuit Current (A)	60+60+60+60+60+60+60+60
No. of MPP Trackers	8
Efficiency	
Max. Efficiency	>99%
MPPT Efficiency	>99.9%
Equipment Protection	
DC input reverse protection	YES
DC ARC protection	Optional
Anti-PID(Potential Induced Degradation)	Optional
DC Switch	YES
Surge Protection Level	TYPE II
General Data	
Ingress Protection(IP) Rating	IP65
Over Voltage Category	OVC II
Cabinet Size[W×H×D] (mm)	543x198x700
Weight (kg)	41.75
Type Of Cooling	Intelligent air cooling
Safety EMC/Standard	IEC/EN 62109-1
DC Output Data	
DC Output Voltage Range(V)	630-1000
Max. DC Output Current(A)	200

STS Module	SUN-STS500L
Grid/PCS Side Data	
Rated AC Input/Output Active Power（kW）	500
Rated AC Input/Output Current（A）	758/725
Rated Input/Output Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Input/Output Grid Frequency	50Hz/60Hz
Load Side Data	
Rated Output Active Power（kW）	500
Rated Output Current（A）	758/725
Rated Output Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Output Grid Frequency	50Hz/60Hz
GEN Side Data	
Rated AC Input Active Power（kW）	500
Rated AC Input Current（A）	758/725
Rated Input Voltage(V)	220/380, 230/400 (three phase)
Grid Connection Form	3L/N/PE
Rated Input Grid Frequency	50Hz/60Hz
General Data	
Off grid switching time	<10ms
Ingress Protection(IP) Rating	IP20
Over Voltage category	OVC III

Cabinet Size[W×H×D] (mm)	543x575x671
Weight (kg)	108
Type Of Cooling	Natural Cooling
Safety EMC/Standard	IEC/EN 61439-1/-2
PCS Model	**SUN-125K-PCS01HP3**
Battery Data	
Battery Type	Lithium-ion
Battery Voltage Range (V)	630-1000
Max. Charging Current (A)	200
Max. Discharging Current (A)	200
Charging Strategy for Li-ion Battery	Self-adaption to BMS
Number of Battery Input	1
DC Input Data	
DC Input Voltage Range(V)	630-1000
Max. DC Input Current(A)	200
AC Input/Output Data	
Rated AC Input/Output Active Power (kW)	125
Max. AC Input/Output Apparent Power (kVA)	125
Rated AC Input/Output Current (A)	189.4/181.2
Max. AC Input/Output Current (A)	189.4/181.2
Rated Input/Output Voltage/Range(V)	220/380, 230/400 0.85Un-1.1Un
Grid Connection Form	3L+N+PE
Rated Input/Output Grid Frequency/Range	50Hz/45Hz-55Hz 60Hz/55Hz-65Hz
Power Factor Adjustment Range	-1~1
Total Current Harmonic Distortion THDi	<3% (of nominal power)
DC Injection Current	<0.5% In
Efficiency	
Max. Efficiency	98.5%
Euro Efficiency	97.8%
MPPT Efficiency	>99%
Equipment Protection	
Integrated	AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection,Anti-islanding Protection, Insulation Impedance Detection, Residual Current Detection
Surge Protection Level	TYPE II(DC), TYPE II(AC)
Interface	
LCD/LED display	LCD
Communication Interface	WIFI, RS485, CAN, Meter
General Data	
Operating Temperature Range(°C)	-40°C-60°C,>45°C Derating
Permissible Ambient Humidity	0-95%
Permissible Altitude	4000m
Noise	<75dB
Ingress Protection(IP) Rating	IP 65(PCS Module)
Cabinet Size[W×H×D] (mm)	543x310x775
Weight (kg)	70.35
Inverter Topology	Non-Isolated
Over Voltage Category	OVC II(DC), OVC III(AC)
Type of Cooling	Intelligent Air Cooling
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105
Safety/EMC Standard	IEC/EN 62477-1

125kW-2.5MW C&I ESS Solution



Model		BOS-B Pro-A3
Main Parameter		
Battery Module Energy (kWh)		16.08
Battery Module Nominal Voltage (V)		51.2
Battery Module Capacity (Ah)		314
Module Weight Approximate (kg)		123
Battery Module Qty In Series (Optional)		5~16
Matching Mode	PCS or Hybrid Inverter	14-15 units for PCS on-grid applications, 15 units for PCS off-grid applications, 5-15 units for hybrid inverter systems
	PCS + MPPT	16 units (on/off-grid) for MPPT Open-Circuit Voltage ⩽800V;15 units (on/off-grid) for MPPT Open-Circuit Voltage ⩽ 750V 14 units (on-grid) for MPPT Open-Circuit Voltage ⩽ 700V
Max.System Nominal Voltage (V)		819.2
Max.System Energy (kWh)		257.23
Max.System Usable Energy (kWh)		231.51
Max.Charge/Discharge Current (A)		180
Other Parameter		
Operating Temperature (℃)		Charge： 0 ~ 55 Discharge： -20 ~ 55
Storage Temperature (℃)		0 ~ 35
Thermal Management		Smart fan cooling
LCD Display		SOC / Fault Code
Status Indicator		Yellow : Battery High Voltage Power On Red : Battery System Alarm
Communication Port		TCP / RS485 / CAN
Communication With BMS		CAN
Humidity		5% ~ 85%
Altitude		⩽3000m
IP Rating of Enclosure		IP20
Noise (dB)		TBD
System Dimension (W × H × D, mm)		2150 × 1136 × 800
System Weight Approximate (kg)		2115
Installation Location		Rack Mounted
Recommend Depth of Discharge		90%
Cycle Life		25±2℃, 0.5C / 0.5C, EOL70%⩾6000
Warranty Period		10 years
Certification		CE / IEC62619 / IEC62040 / UN38.3

Typical Application Scenarios

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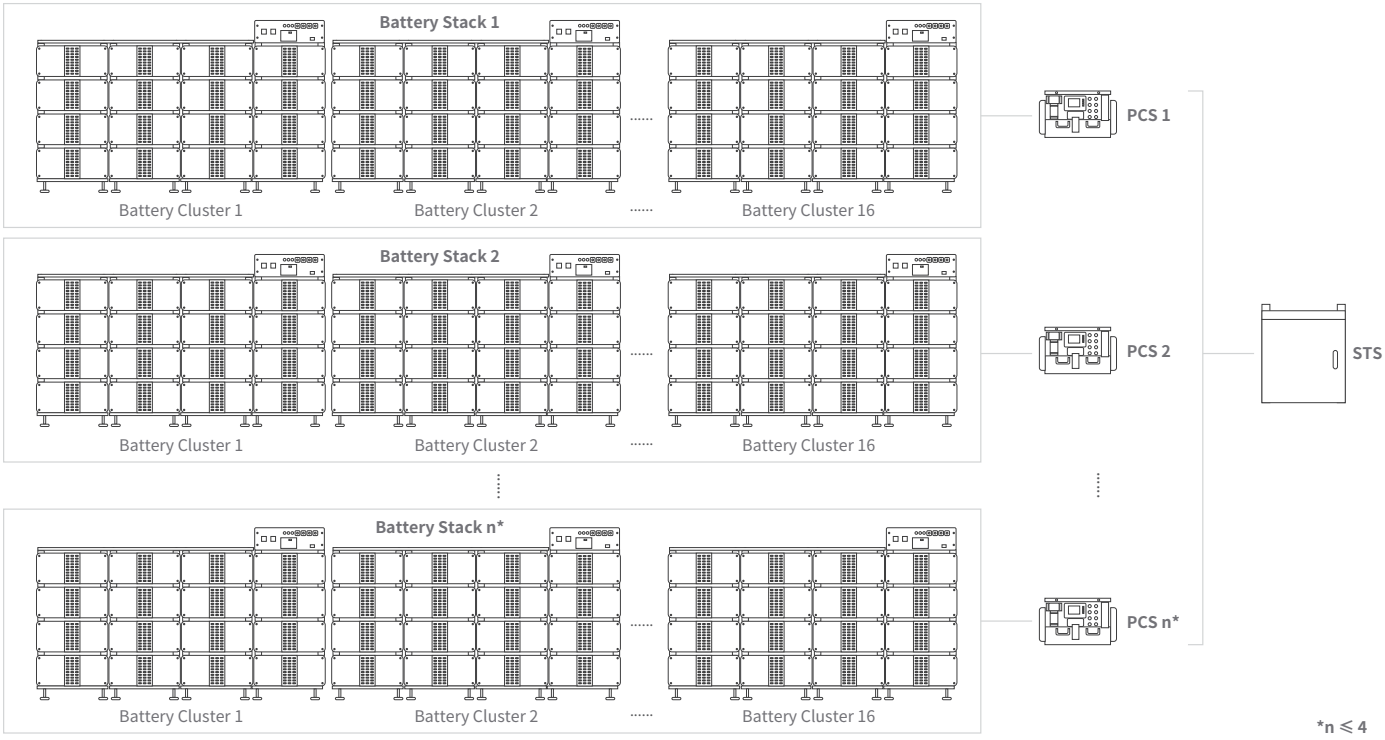
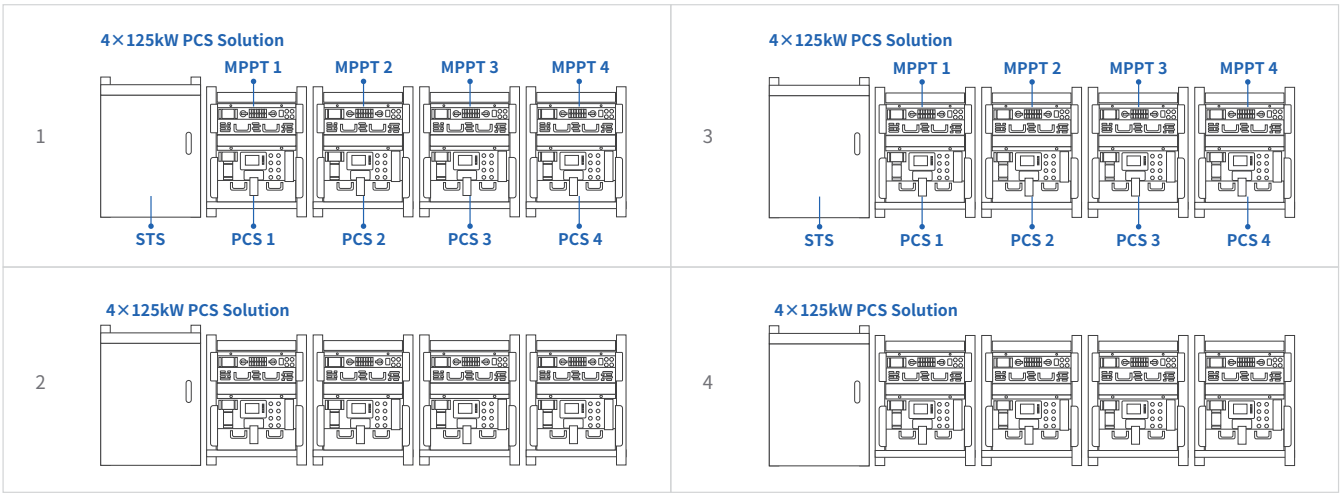
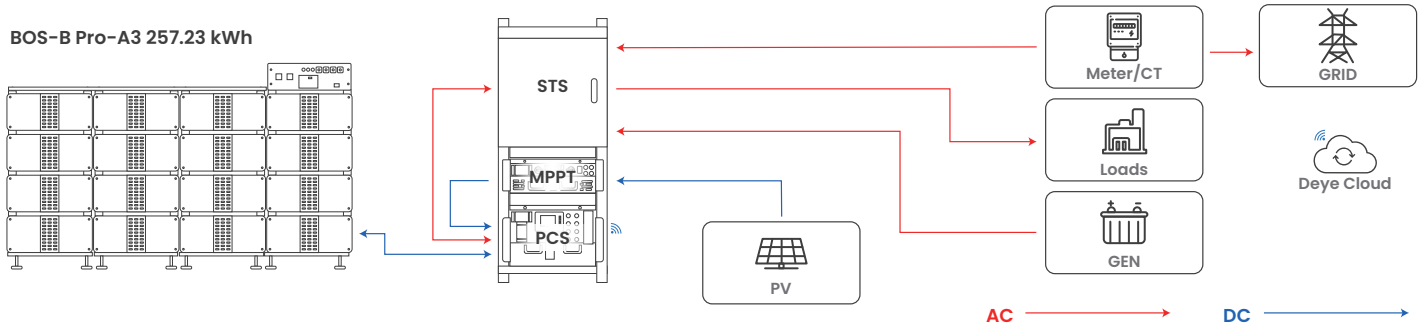
One PCS can support up to 16 racks of batteries in parallel



One STS module can connect to four 125kW PCS modules for parallel operation



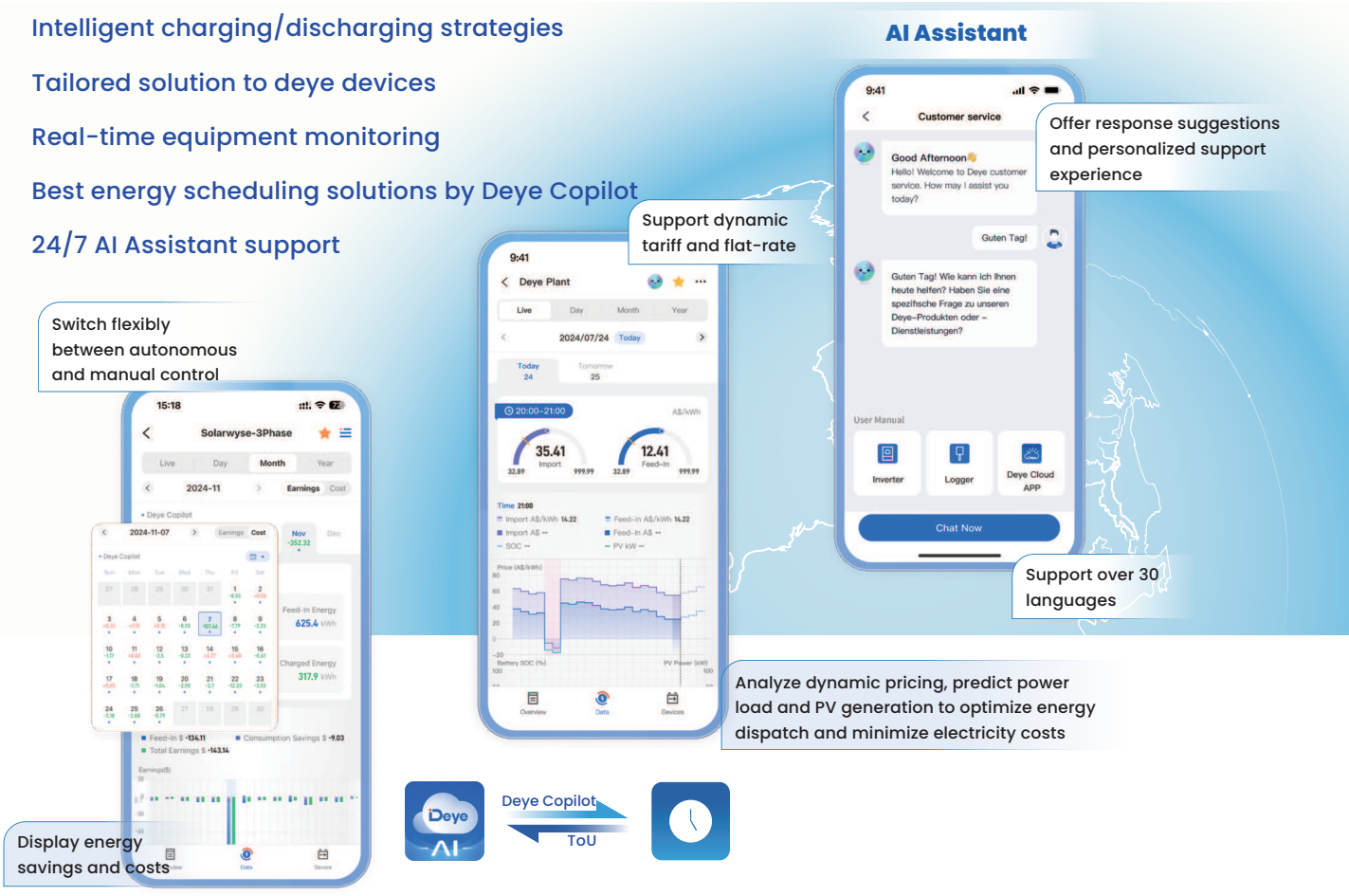
Five STS modules can provide parallel support for twenty 125kW PCS modules, forming a 2.5MW system.



Deye Cloud

All-in-one Energy & Device Management Platform

- Unlock significant savings
- Individual Add-on for dynamic tariff
- Intelligent charging/discharging strategies
- Tailored solution to deye devices
- Real-time equipment monitoring
- Best energy scheduling solutions by Deye Copilot
- 24/7 AI Assistant support



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Cloud-edge Collaboration
Faster and more efficient

Accelerated Connection
Optimized for speed and performance

Localized Data Centers
Ensure data sovereignty and compliance in EU & US

Deye Copilot
AI-powered energy analysis and control

AI Assistant
24/7 support, fast, efficient, in your language