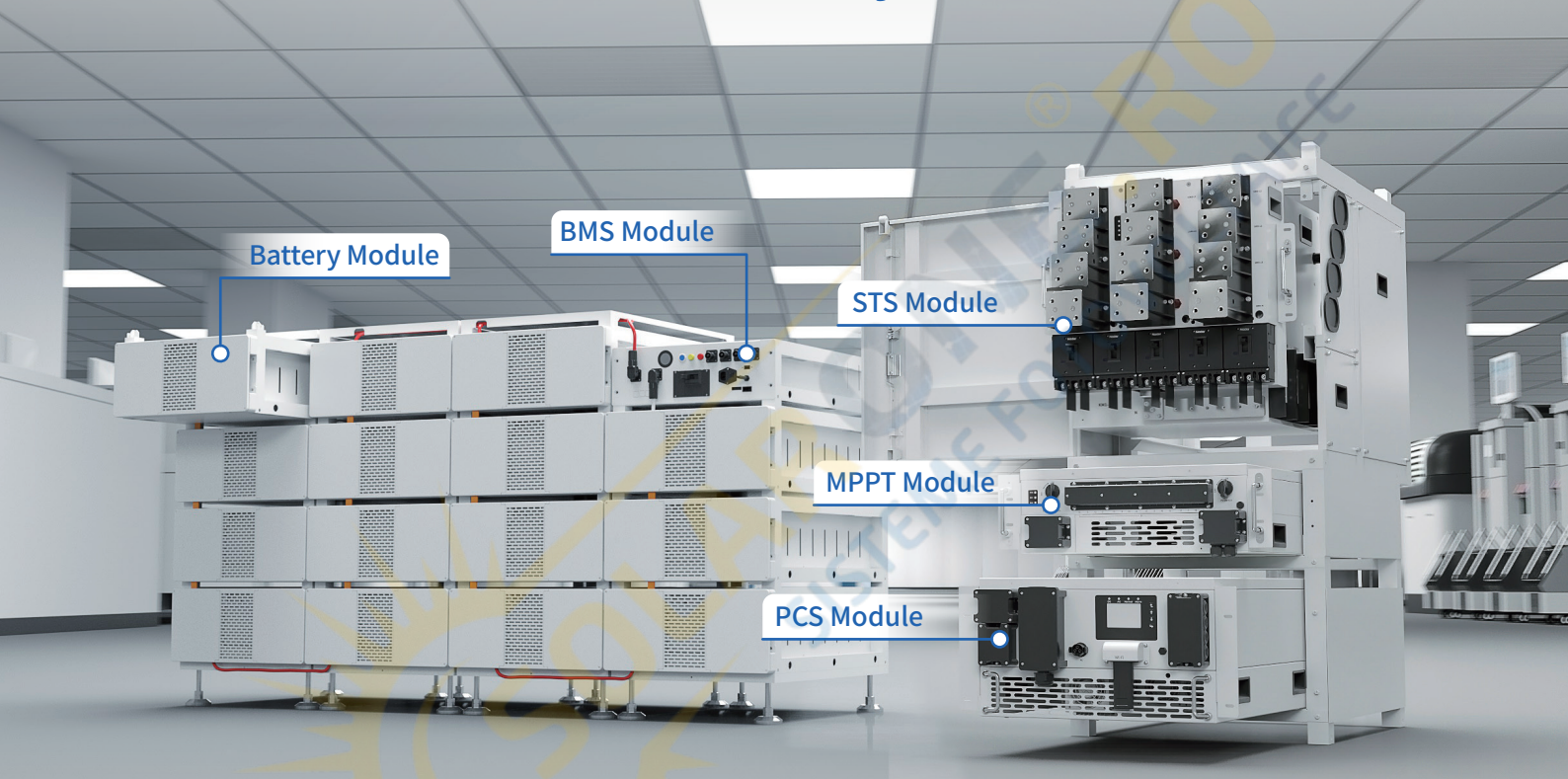
# 100KW-2.5MW C&I ESS SOLUTION

## 100/125kW PCS+200kW MPPT+500kW STS

## 「241kWh BOS-B Pro-A3 Battery」




### Fast & Reliable Switching

- **Seamless Switching :**
STS module can switch between on-grid, off-grid, and diesel modes in <20ms.
- **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

- **Wide MPPT Range :**
800V PV system with 180-750V MPPT range.
- **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 :**
PCS supports and peak power up to 170%.
- **LFP battery:**
BOS-B Pro-A3's robust design enhances the system's reliability.

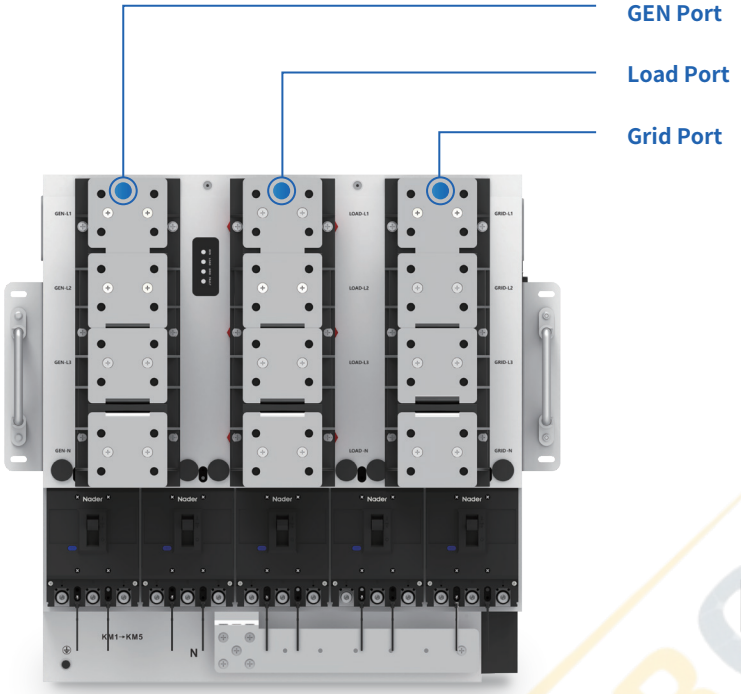
### High Performance & Scalability

- **Powerful Capacity :**
PCS offers 100kW/125kW, expandable up to 2.5MW.
- **Large Energy Storage:**
BOS-B Pro-A3 battery delivers 241.15kWh per cluster, supporting up to 15 packs per PCS.
- **High Efficiency :**
PCS reaches 98.5% efficiency, MPPT exceeds 99%.

# 100kW-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 20ms. Each diesel, load, and grid connection is independent, with each path supporting 500kW. One STS module can connect to five 100kW PCS modules or 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 **20ms**.

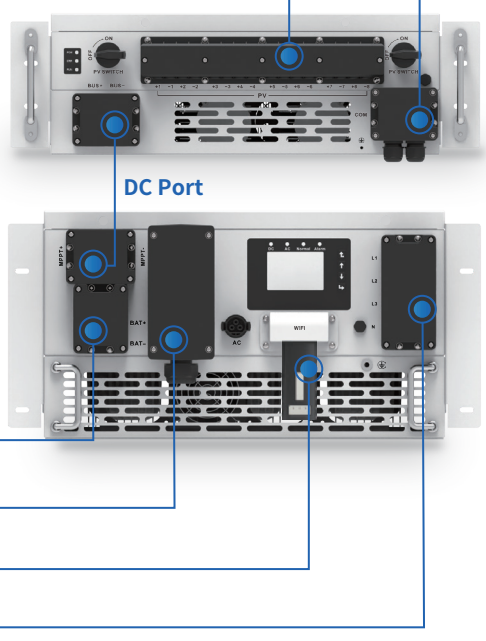
## MPPT Module & PCS Module

### MPPT Module (8 MPP Trackers)

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

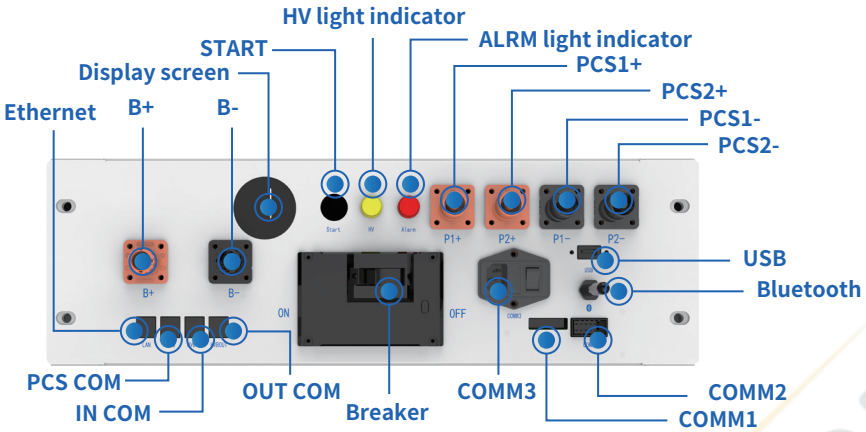
### PCS Module (100kW/125kW)

◎ **175A/200A** charge and discharge current.
◎ Maximum efficiency of **98.5%**.
◎ System rated power up to **2.5MW**.
◎ Supports instantaneous peak power up to 170% of rated power.
◎ Integrates zero-export and time-of-use control functions.
◎ Eliminating the need for additional EMS.



# Battery Pack Accessories

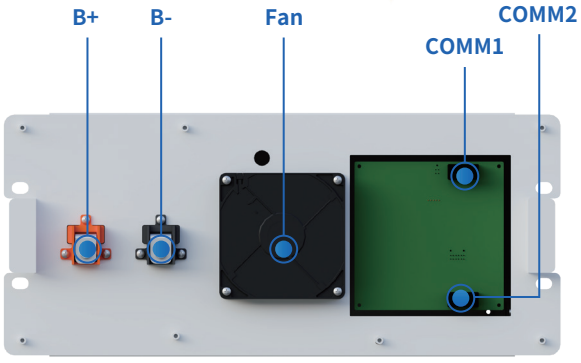
| Model | BOS-B-PDU-2-A |
|---|---|
| Operating Voltage | 200~1000Vdc |
| Nominal Charge/Discharge Current | 180A |
| Operating Temperature | -20~60°C |
| Ingress Protection | IP20 |
| AC Input Rating | 220±10%VAC/2A |
| Details | 788.6×526×167.2(W×H×D),32kg |




◎ 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),123kg |




◎ 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

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| 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 | <20ms |
| Ingress Protection(IP) Rating | IP20 |
| Over Voltage category | OVC III |

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| | | |
|---|---|---|
| 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-100K-PCS01HP3** | **SUN-125K-PCS01HP3** |
| **Battery Data** | | |
| Battery Type | Lithium-ion | |
| Battery Voltage Range (V) | 630-1000 | |
| Max. Charging Current (A) | 175 | 200 |
| Max. Discharging Current (A) | 175 | 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 | 630-1000 |
| Max. DC Input Current(A) | 200 | 200 |
| **AC Input/Output Data** | | |
| Rated AC Input/Output Active Power (kW) | 100 | 125 |
| Max. AC Input/Output Apparent Power (kVA) | 110 | 125 |
| Rated AC Input/Output Current (A) | 151.6/145 | 189.4/181.2 |
| Max. AC Input/Output Current (A) | 166.7/159.5 | 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<br>the Warranty Period Depends the Final Installation Site of Inverter,<br>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 | |

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# 100kW-2.5MW C&I ESS Solution

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| 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 ) | 15 |
| Scalability | 14-16 units for PCS on-grid applications 15-16 units for PCS off-grid applications<br>5-15 units for hybrid inverter systems |
| System Nominal Voltage ( V ) | 768 |
| System Energy ( kWh ) | 241.15 |
| System Usable Energy ( kWh ) | 217.04 |
| Max.Charge/Discharge Current ( A) | 180 |
| **Other Parameter** | |
| Operating Temperature ( °C ) | Charge： 0 ~ 55 Discharge： -20 ~ 55 |
| Storage Temperature ( °C ) | 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 ) | 1850 |
| Installation Location | Rack Mounted |
| Recommend Depth of Discharge | 90% |
| Cycle Life | 25±2°C, 0.5C / 0.5C, EOL70%⩾6000 |
| Warranty Period | 10 years |
| Certification | CE / IEC62619 / IEC62040 / UN38.3 |

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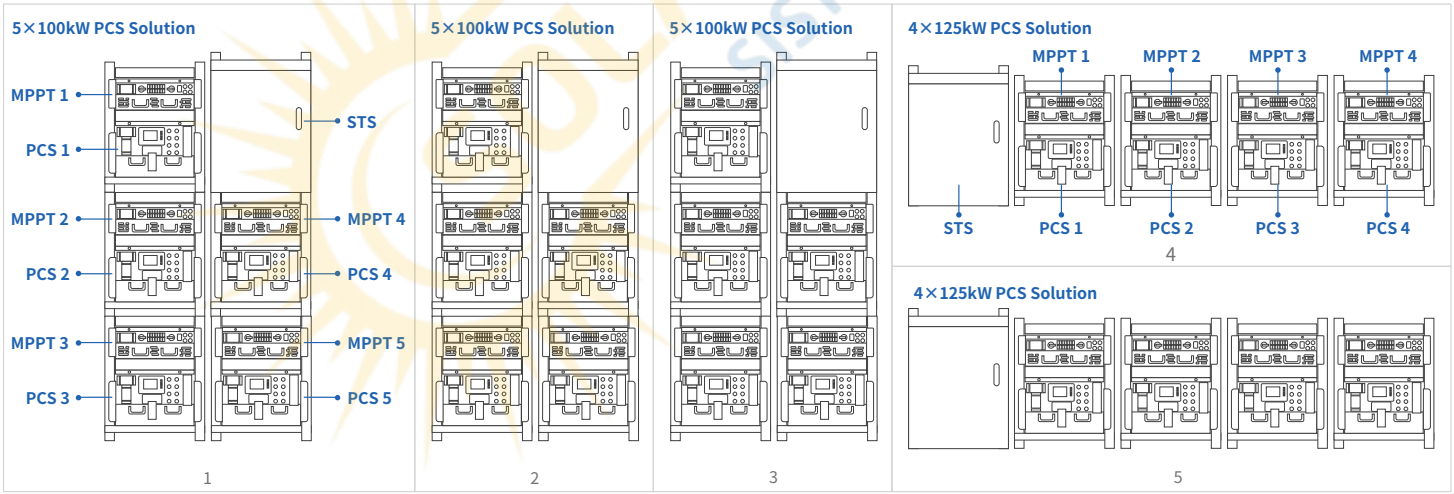
# Typical Application Scenarios

## Typical Application Scenarios

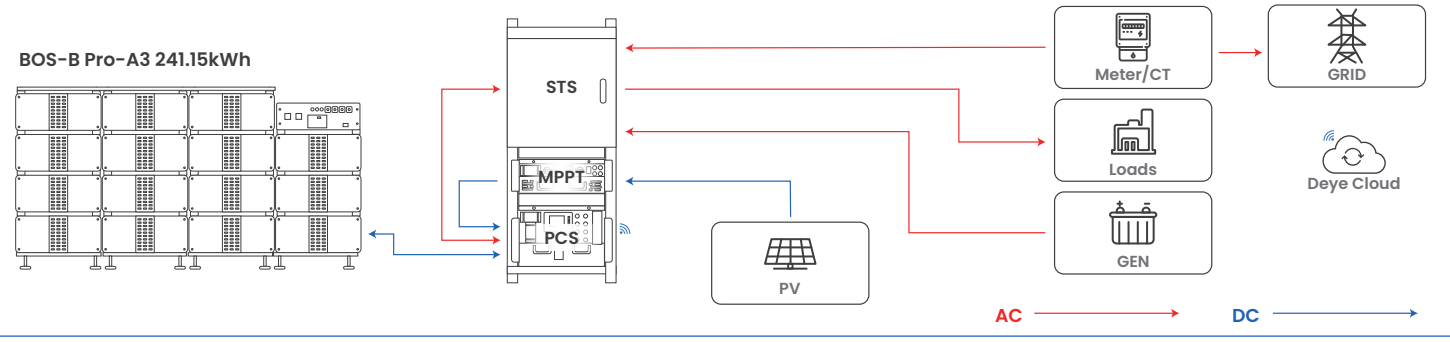
### One PCS can support up to 16 racks of batteries in parallel

*For 100kW PCS: n ⩽ 5; for 125kW PCS: n ⩽ 4

### One STS module can connect to five 100kW PCS modules or four 125kW PCS modules for parallel operation




### Up to five STS modules can be paralleled to form a 2.5MW system

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# 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

### AI Assistant

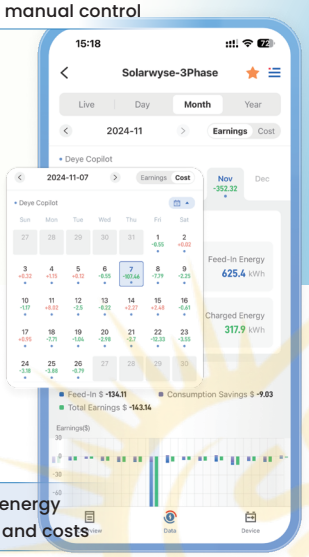
Offer response suggestions and personalized support experience

Support over 30 languages

Support dynamic tariff and flat-rate

Analyze dynamic pricing, predict power load and PV generation to optimize energy dispatch and minimize electricity costs

Switch flexibly between autonomous and manual control




Display energy savings and costs

Deye Copilot

ToU

## Smarten Up Your Home Energy

Download Deye Cloud APP to join us!

Embrace a seamless, effortless energy experience that's both eco-friendly and budget-friendly with our intelligent assistant

**APP & Web**
Manage your energy effortlessly

**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