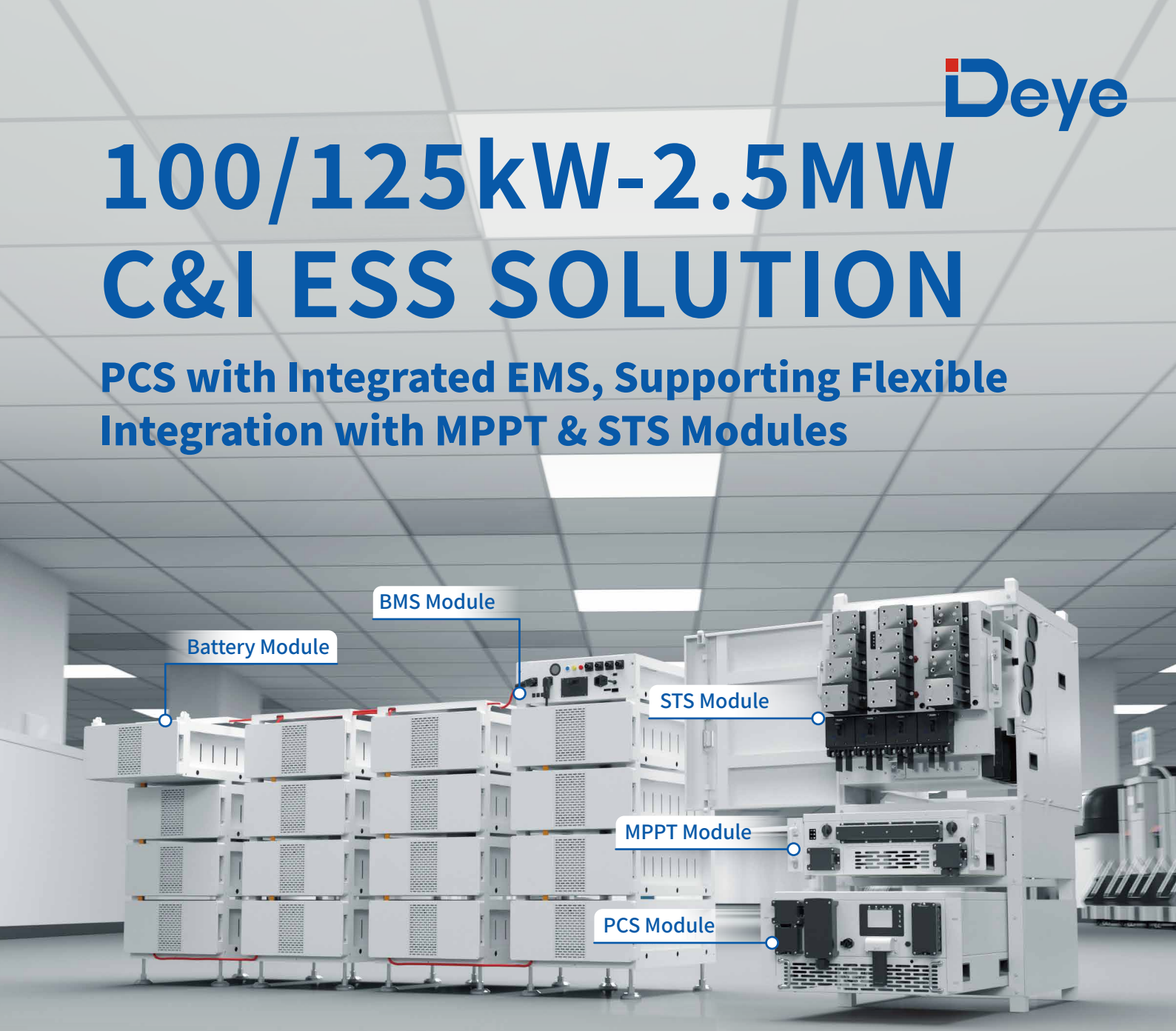
# 100/125kW-2.5MW C&I ESS SOLUTION

## PCS with Integrated EMS, Supporting Flexible Integration with MPPT & STS Modules




### Power Continuity

- **UPS-Level Switching:**
  <10 ms seamless on-grid/off-grid switching via STS.
- **Strong Overload Capability:**
  Supports 2 × peak power output for 12s in off-grid mode, ensuring stable operation of critical loads.

### Smart Energy Management

- **Integrated EMS:**
  Supports zero-export, TOU optimization, peak shaving and demand management.
- **Flexible Control:**
  Flexible Control: Local touchscreen control and remote monitoring via Deye Cloud.

### System Scalability

- **Flexible Expansion:**
  100/125kW PCS units enable system scalability up to 2.5 MW.
- **Large Energy Storage:**
  Up to 257 kWh per battery cluster, supporting up to 16 clusters per PCS.

### Smart Battery Management

- **Long Backup Duration:**
  Supports up to 32 hours of continuous backup power.
- **Intelligent Balancing:**
  Independent BMS optimizes charge/discharge distribution, extending overall battery lifespan.

### Efficient PV Integration

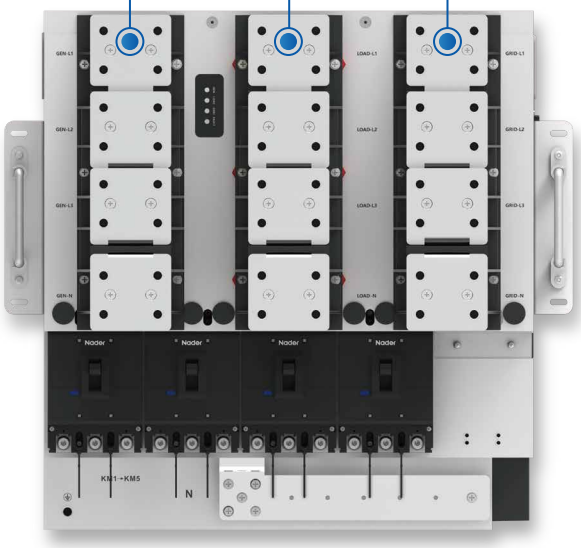
- **Multi-Tracker MPPT Design:**
  Each MPPT module supports 8 MPPT trackers, with up to 40 A per tracker.
- **High PV Capacity:**
  Up to 200 kWp PV capacity per MPPT module.

### Reliability & Protection

- **IP65 Design:**
  IP65-rated PCS and MPPT modules for reliable operation in demanding environments.
- **Advanced Battery Safety:**
  $LiFePO_4$ cells with integrated aerosol fire suppression for enhanced protection.

# 100kW-2.5MW C&I ESS Solution

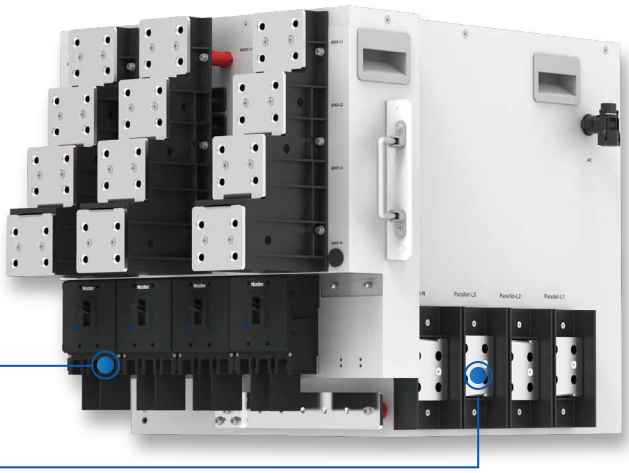
## STS Module




◎ Three independent power paths (diesel / load / grid), with each path supporting 500 kW.

◎ <10 ms on-grid/off-grid switching*.

◎ 5×100 kW or 4×125 kW PCS units per STS module, up to 5 STS modules in parallel.




## MPPT Module & PCS Module

### MPPT Module (8 MPPT Trackers)

◎ 8 MPPT Trackers, up to 40A per tracker.

◎ Up to 200 kWp PV capacity per MPPT module.

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

◎ **175A/200A** charge and discharge current.

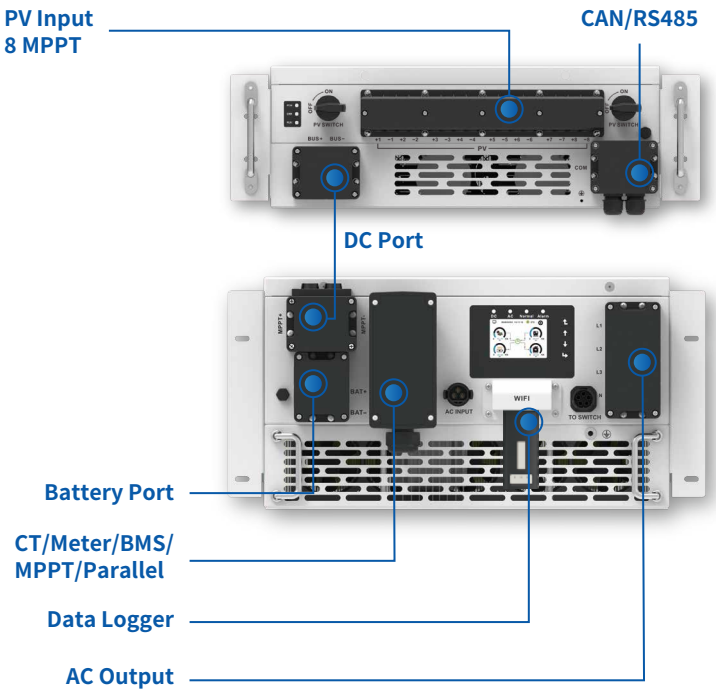
◎ Maximum efficiency of **98.5%**.

◎ System rated power up to **2.5MW**.

◎ Supports instantaneous peak power up to 200% of rated power.

◎ Integrates zero-export and time-of-use control functions.

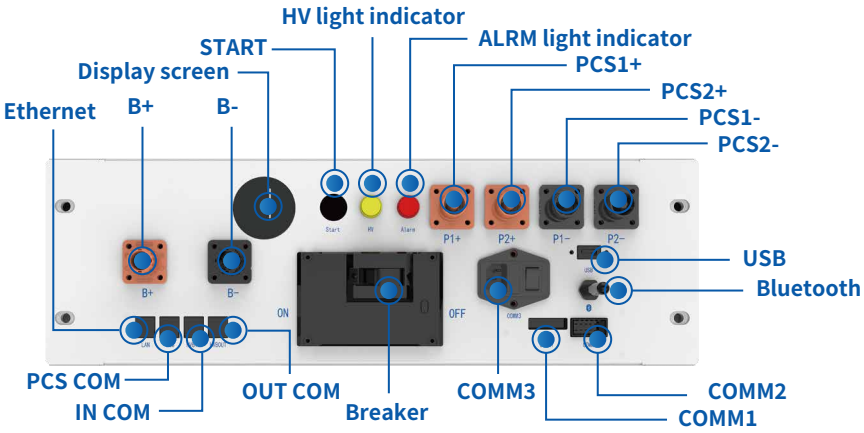
◎ Built-in EMS for intelligent energy management and optimized system operation.




* For stable off-grid operation, the continuous off-grid load should not exceed 70% of the PCS rated power.

# Battery Pack Accessories

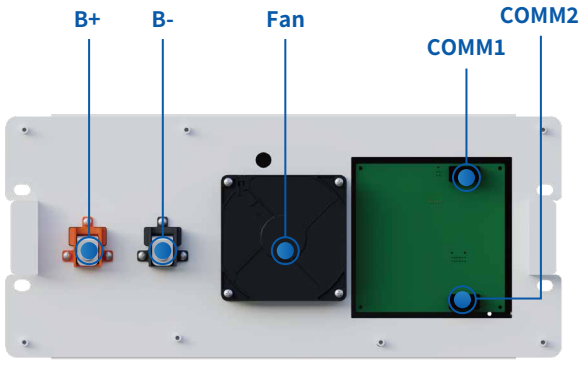
| Model | BOS-B-PDU-2-A |
|---|---|
| Operating Voltage | 200~1000Vdc |
| Nominal Charge/Discharge Current | 180A |
| Operating Temperature | -20~60°C |
| Ingress Protection | IP20 |
| AC Input Rating | 220±10%VAC/2A |
| Details | 788.6×526×167.2(W×D×H),32kg |




◎ 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 |
| Max 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×D×H),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 accessory package is designed for use with the 125 kW PCS and 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

| MPPT Module | SUN-MPPT-L01-EU-AM8 |
|---|---|
| **PV String Input Data** | |
| Max. PV access power(kW) | 200 |
| Max. PV Input Power(kW) | 160 |
| 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-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% | |
| **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(℃) | -40℃-60℃,>45℃ 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 (Excluding connectors and brackets) | |
| Weight (kg) | 81.86 | |
| 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 | |

# 100kW-2MW 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 ) | | 126 |
| Battery Module Qty In Series ( Optional ) | | 5~16 |
| Matching Mode | PCS | 14-16 units for PCS on-grid applications, 15~16 units for PCS off-grid applications |
| | PCS + MPPT | 16 units (on/off-grid) for MPPT Open-Circuit Voltage ⩽800V;15 units (on/off-grid) for MPPT Open-Circuit Voltage ⩽ 750V<br>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 × 1305 × 800 |
| System Weight Approximate ( kg ) | | 2240 |
| 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 |

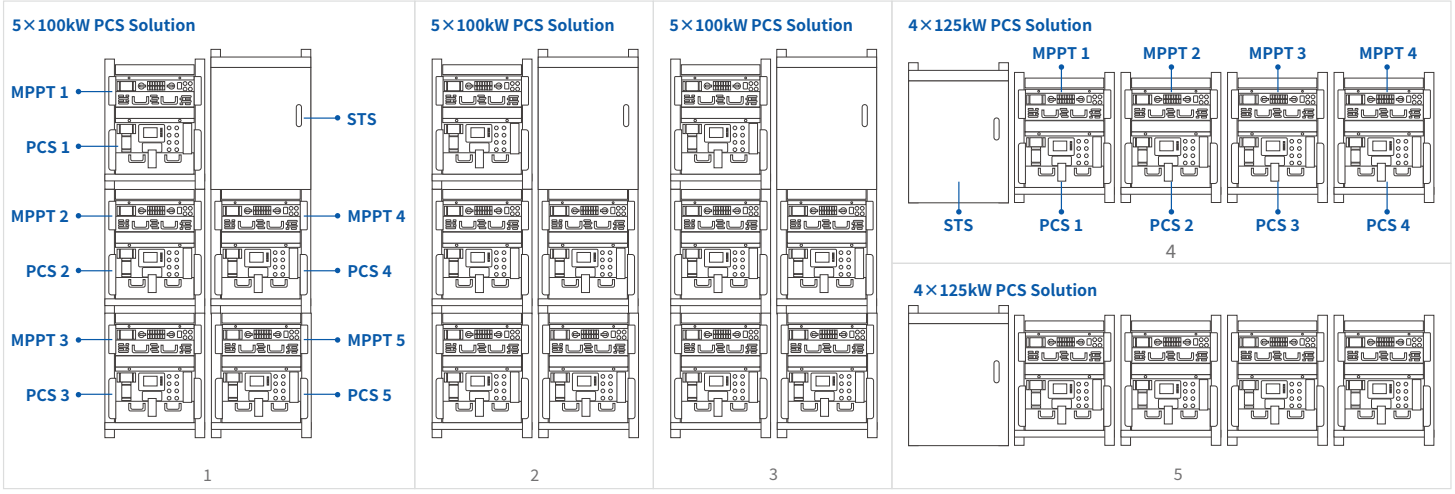
# Typical Application Scenarios

## Typical Application Scenarios

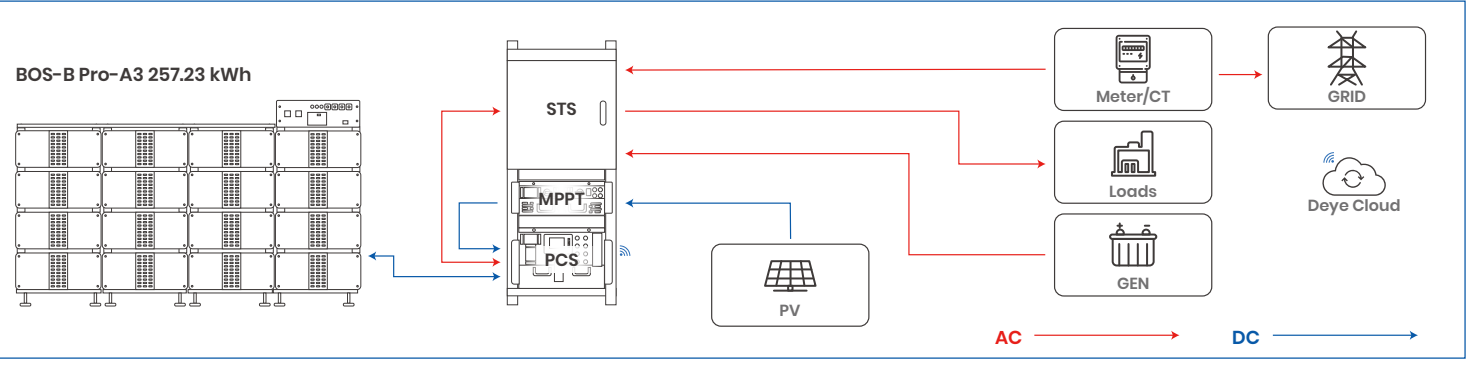
### One PCS can support up to 16 racks of batteries in parallel


*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



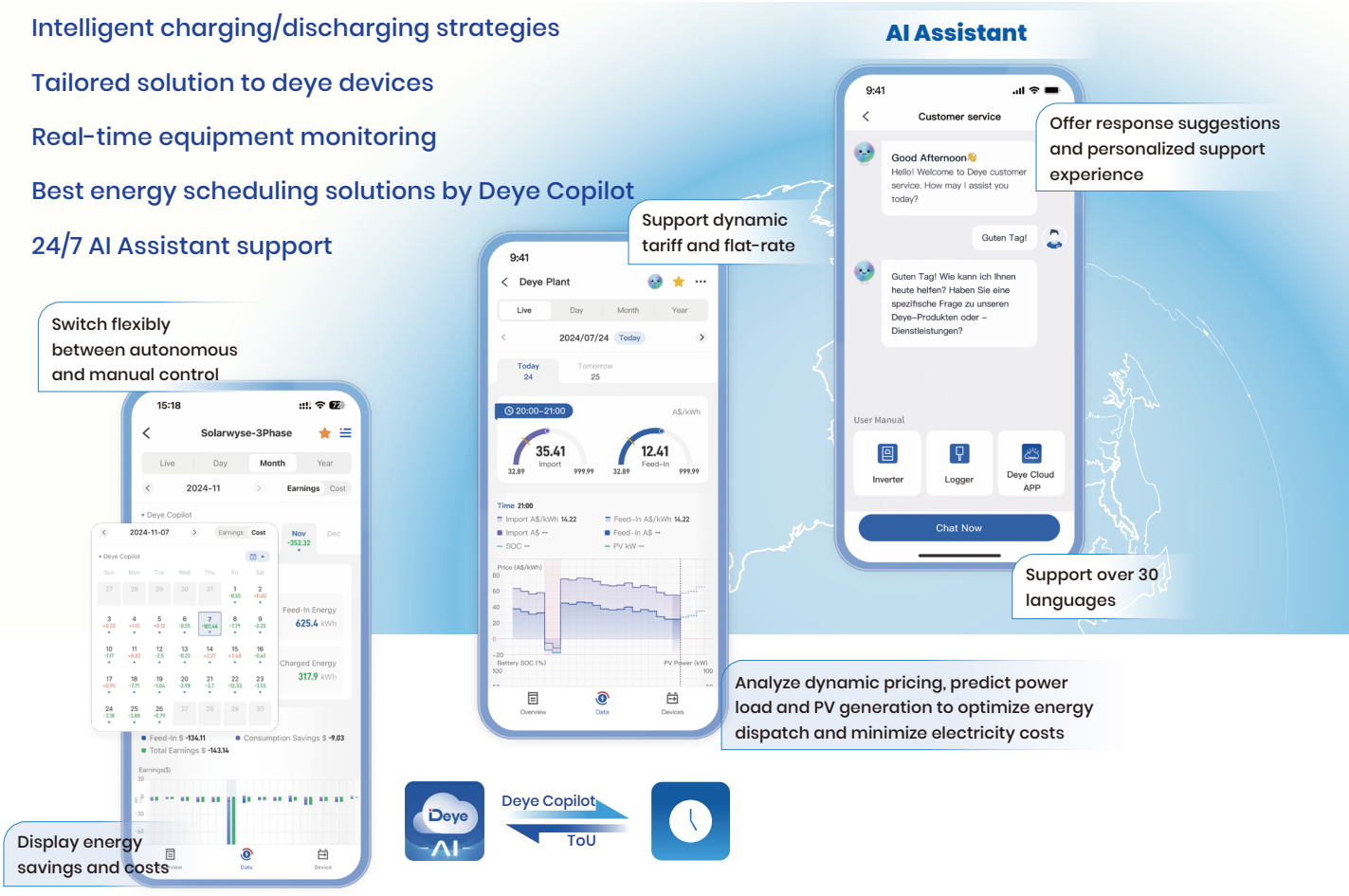

### Five STS modules can provide parallel support for twenty-five 100kW PCS modules or twenty 125kW PCS modules, forming a 2.5MW system.



# 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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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