



Data Centre & Critical Equipment Power Solution

0ms SEAMLESS SWITCHING | NO INTERRUPTION | NO DISTORTION | NO SAG



Deye

SOLAR POWER | LITHIUM BATTERIES | GRID + GEN

Deye 100kW to 2.5MW Solar PV – Lithium Storage Solution



System Overview



On-line UPS Structure

- **0 ms Load-Side Disruption:**

Zero transfer time between mains supply and backup power.



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:**

Built-in EMS intelligently manages AC/DC & MPPT power based on load.

- **Easy Management:**

Color touchscreen for local or remote cloud adjustments.



Efficient PV Integration

- **Retrofits Made Easy:**

Supports both DC and AC coupling, for flexible retrofits and system expansions.



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 Pro'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:**

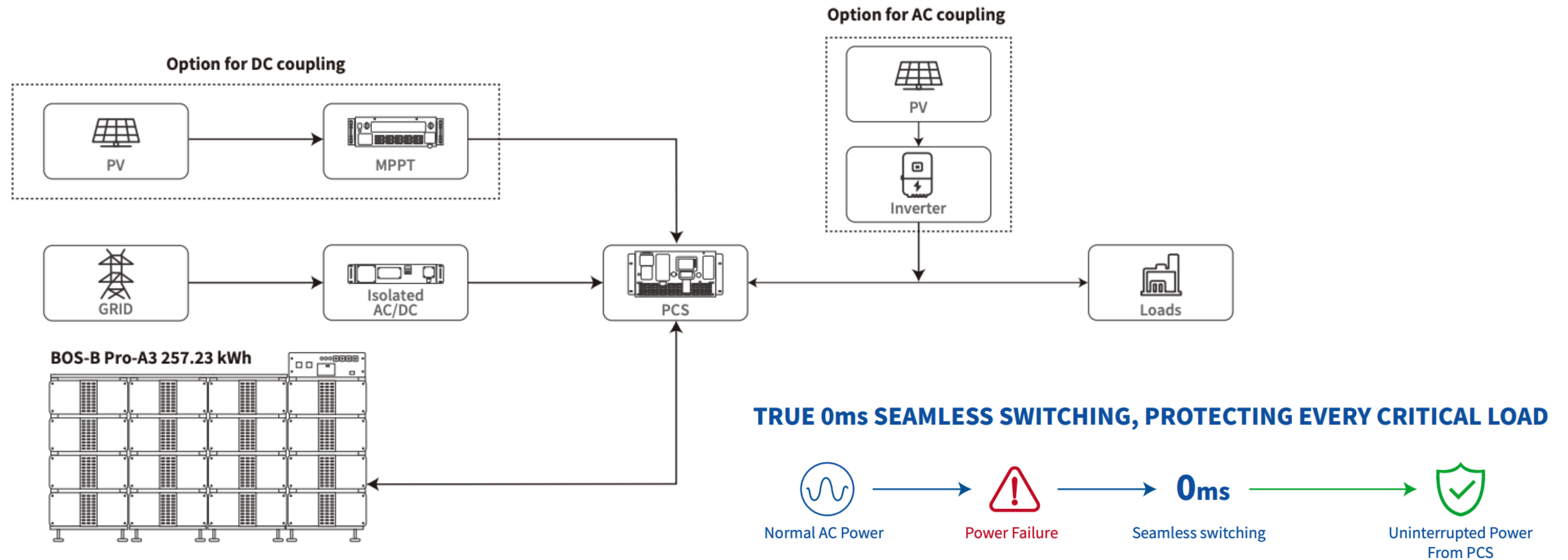
BOS-B Pro battery supports 257 kWh per cluster, supporting up to 16 packs per PCS.

- **High Efficiency:**

PCS reaches 98.5% efficiency, MPPT exceeds 99%.



System Architecture





Application Scenarios



Telecom

Keep communication networks online and stable.



Data Center

Ensure continuous operation of critical IT systems.



Medical Equipment

Provide reliable power for life-supporting systems.



Industrial Automation

Guarantee production continuity and improve efficiency.



Rail Transit

Ensure safe operation of signaling and control systems.



Financial Institutions

Protect core business systems 7×24 uninterrupted.



Advantage over Traditional UPS

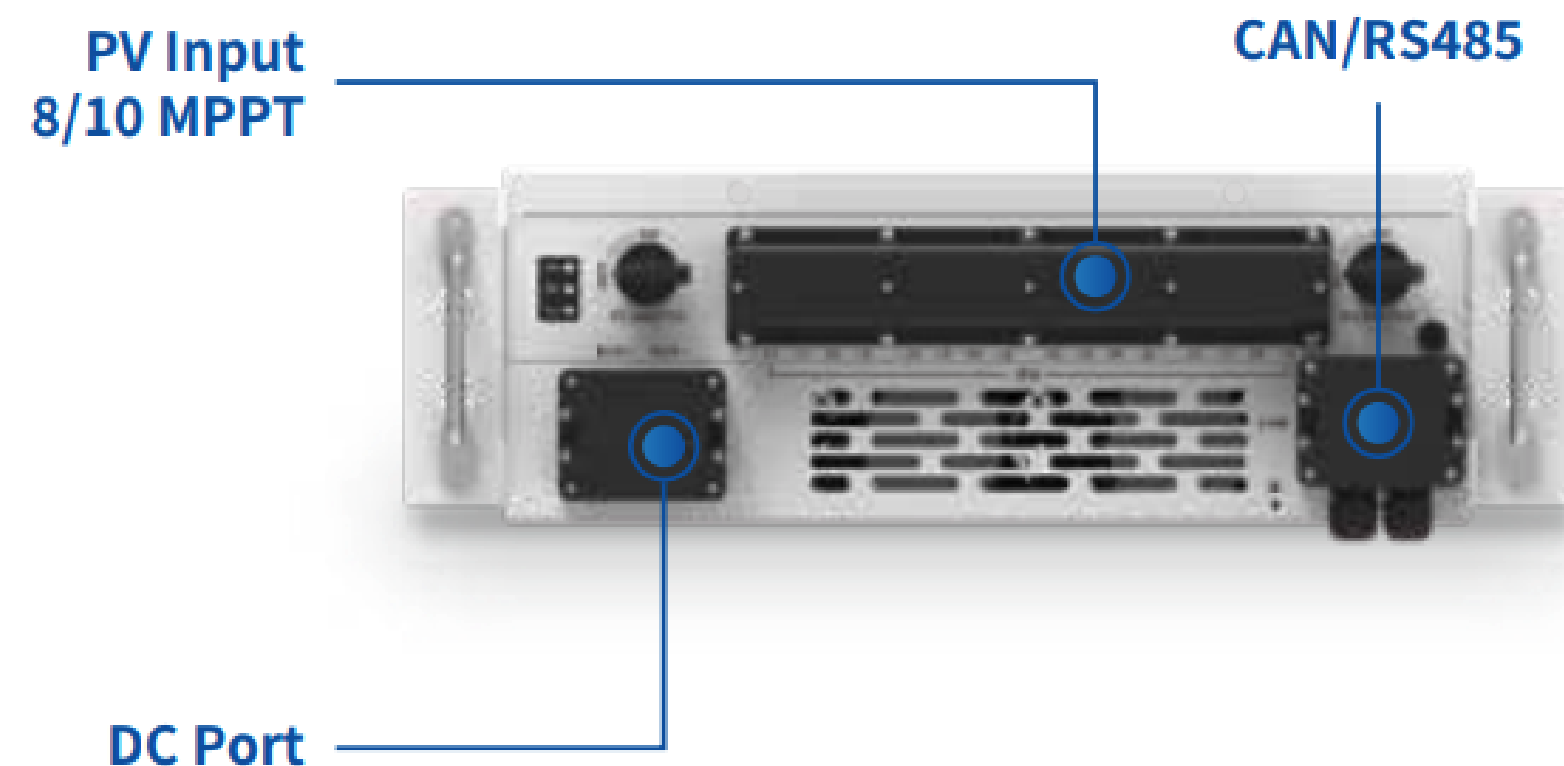
This **Solar-Powered On-Line UPS with Lithium Battery** combines power protection, solar generation and energy storage in a single system. Unlike traditional UPS systems that rely primarily on lead-acid batteries for short-duration backup, it provides **0 ms load-side disruption**, integrated solar PV, high-capacity **LiFePO₄ energy storage**, and intelligent energy management.

The battery can be used for daily energy savings, peak shaving and extended backup—not just during outages—reducing dependence on grid power and diesel generators while improving overall system efficiency and reliability.

Traditional Online UPS	Deye Solar On-Line UPS
Grid → rectifier → DC bus → inverter → load	Grid → AC/DC → DC bus → PCS → load
Usually lead-acid batteries	LiFePO ₄ lithium batteries
Battery primarily for backup	Battery for backup + energy storage + energy management
No direct PV integration	Integrated MPPT PV input
Short backup duration normally	Can be configured for hours of backup
Battery capacity usually sized around short outages	Battery can be sized for long-duration energy shifting
UPS is primarily backup equipment	Becomes UPS + Solar + BESS + EMS
Little energy arbitrage	Peak shaving, TOU, demand management, zero export
Battery replacement is a major maintenance item	LFP system designed for long service life
Rectifier and inverter sized mainly for UPS duty	PCS can support substantial continuous and peak loads
Generator normally supplies extended outages	PV + battery can supply extended outages
Separate solar inverter required	MPPT integrated into the architecture



Modules – MPPT Module

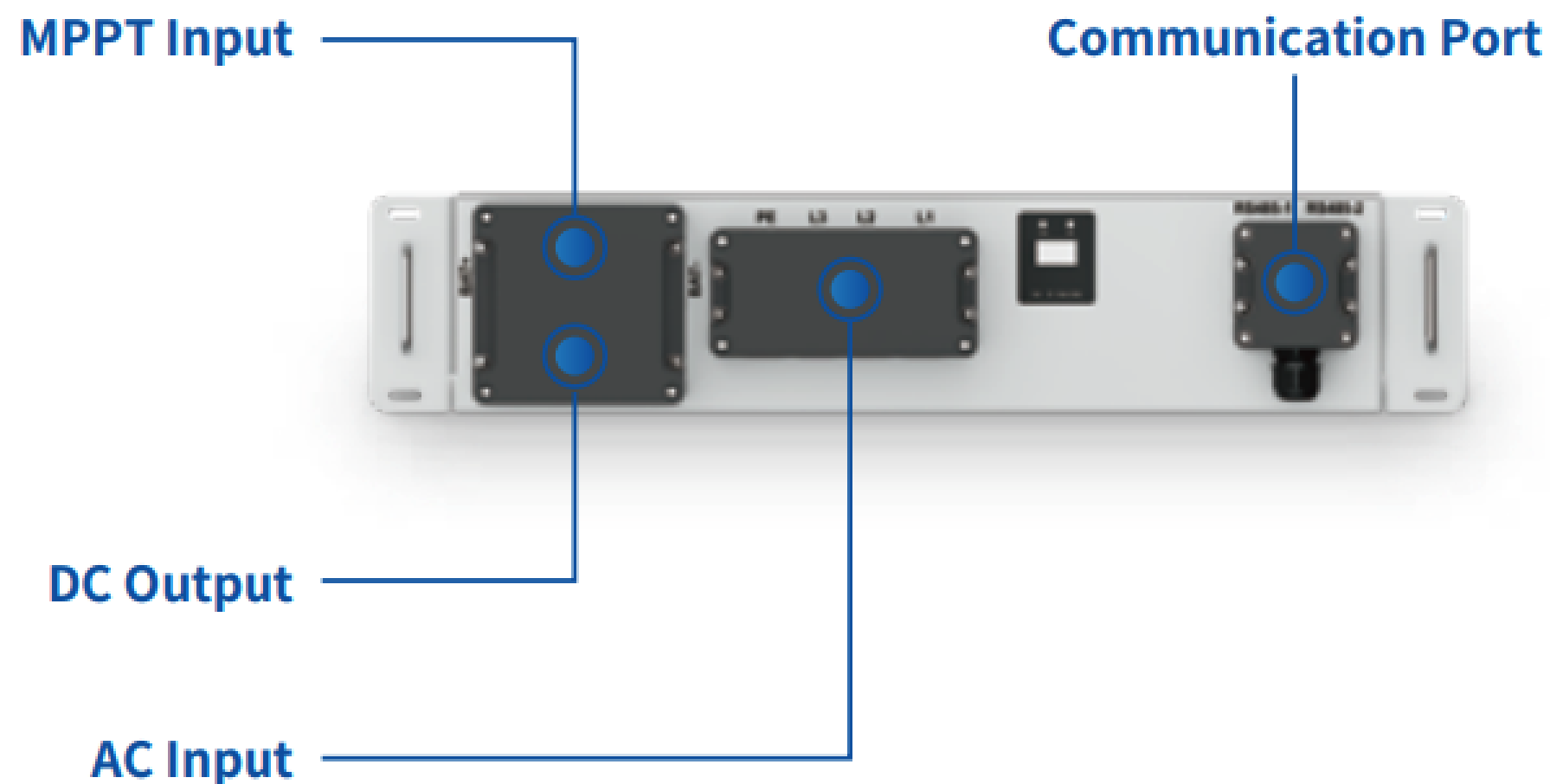


MPPT Module (8 MPP Trackers / 10 MPP Trackers)

© Maximum 200/250kWp PV module connection with 8/10 MPPT channels, **40A** per MPPT.



Modules – AC/DC Module



AC/DC Module (80kW)

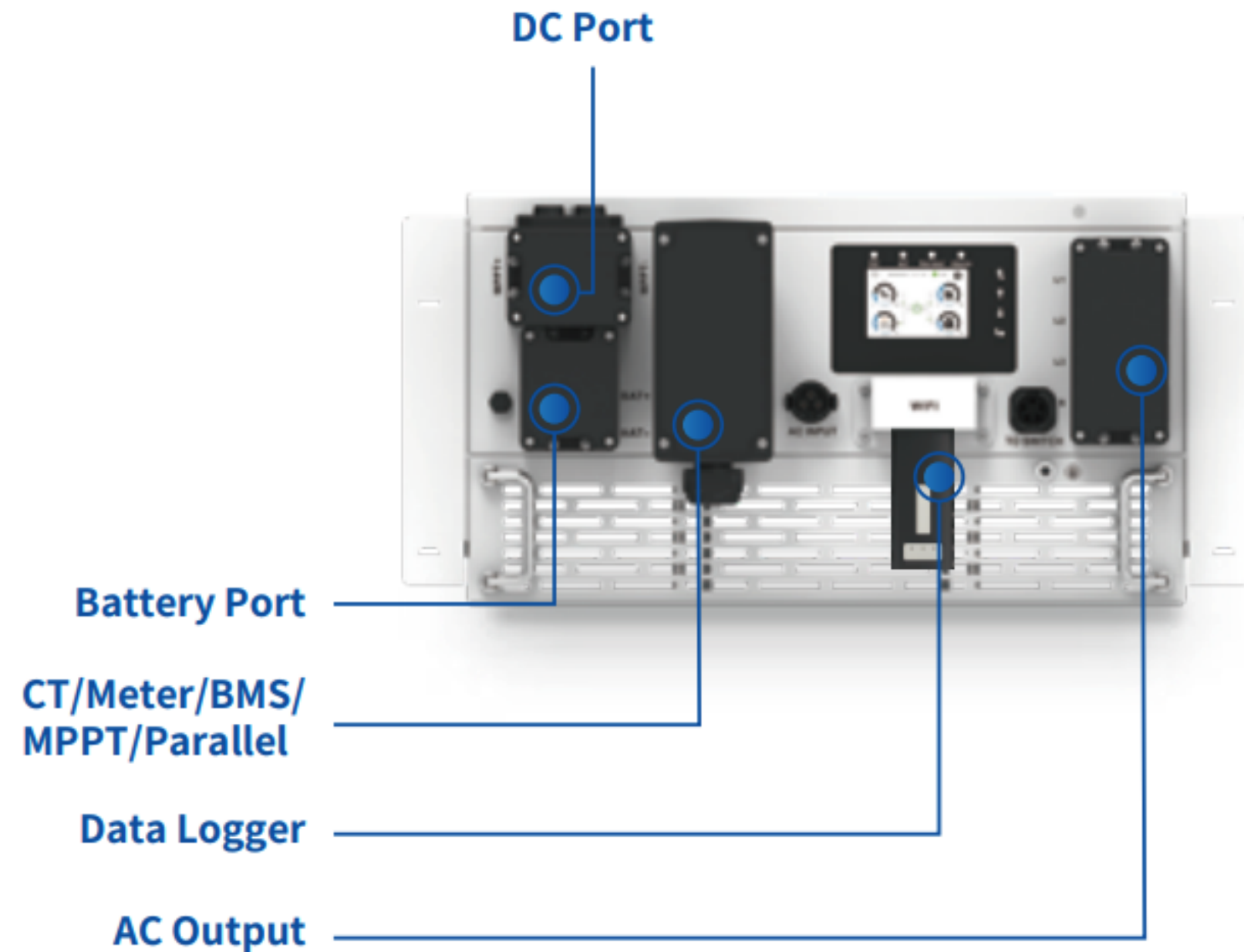
- ◎ Wide Constant Power Voltage Range
300Vdc – 1000Vdc constant power output.
- ◎ Wide Input Voltage Range
260Vac – 530Vac, adaptable to various power grids.
- ◎ Ultra-High Efficiency with All-SiC Design
Peak efficiency **>97%**, average efficiency **>96%**.
- ◎ Intelligent Air Duct Detection
Full-coverage temperature sensing points along the entire air duct to monitor airflow condition.



Modules – PCS Module

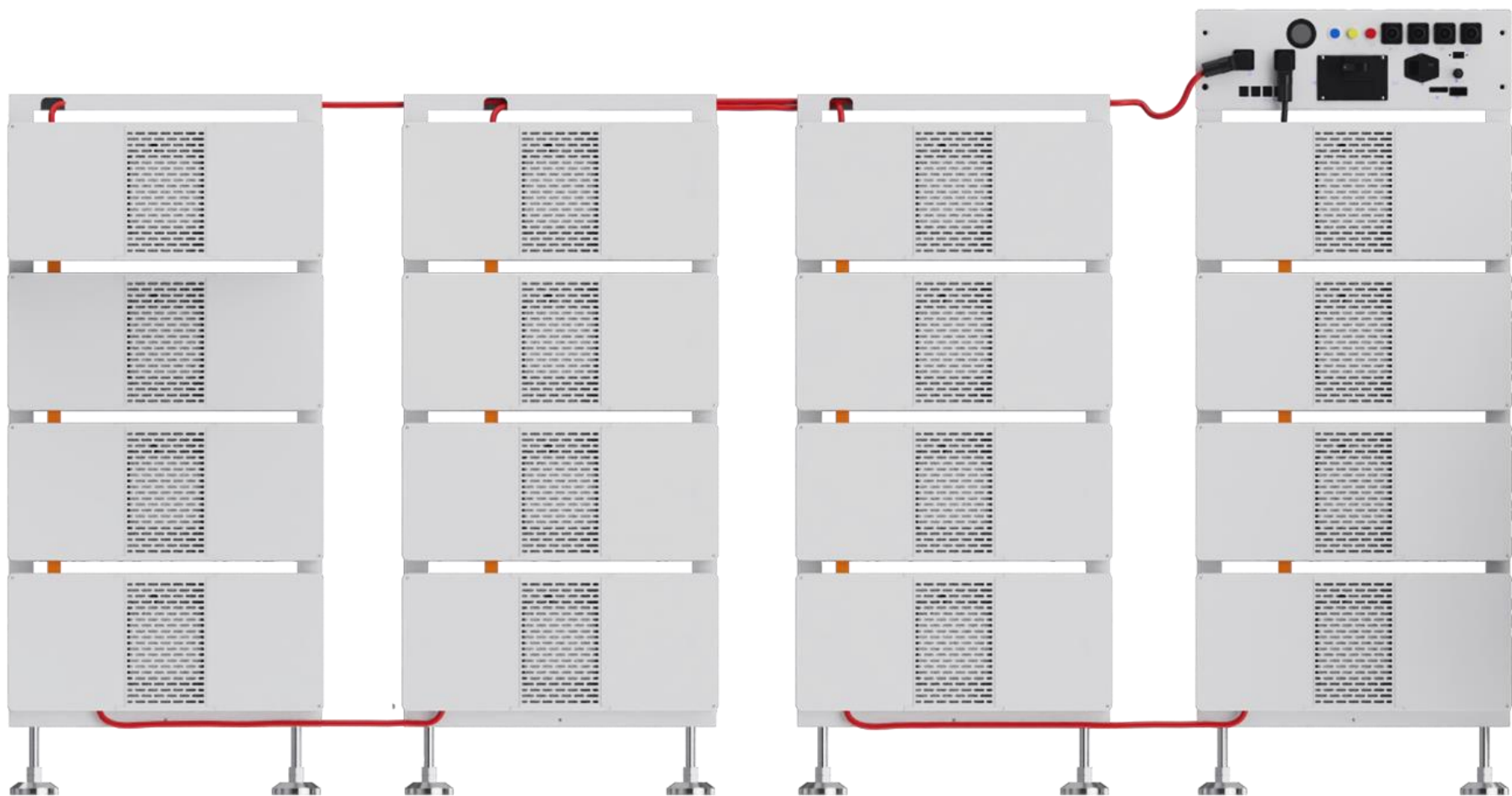
PCS Module (100kW/125kW)

- ◎ **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.
- ◎ Eliminating the need for additional EMS.



*PCS is powered only by the DC bus, ensuring there no AC grid or generator switching.

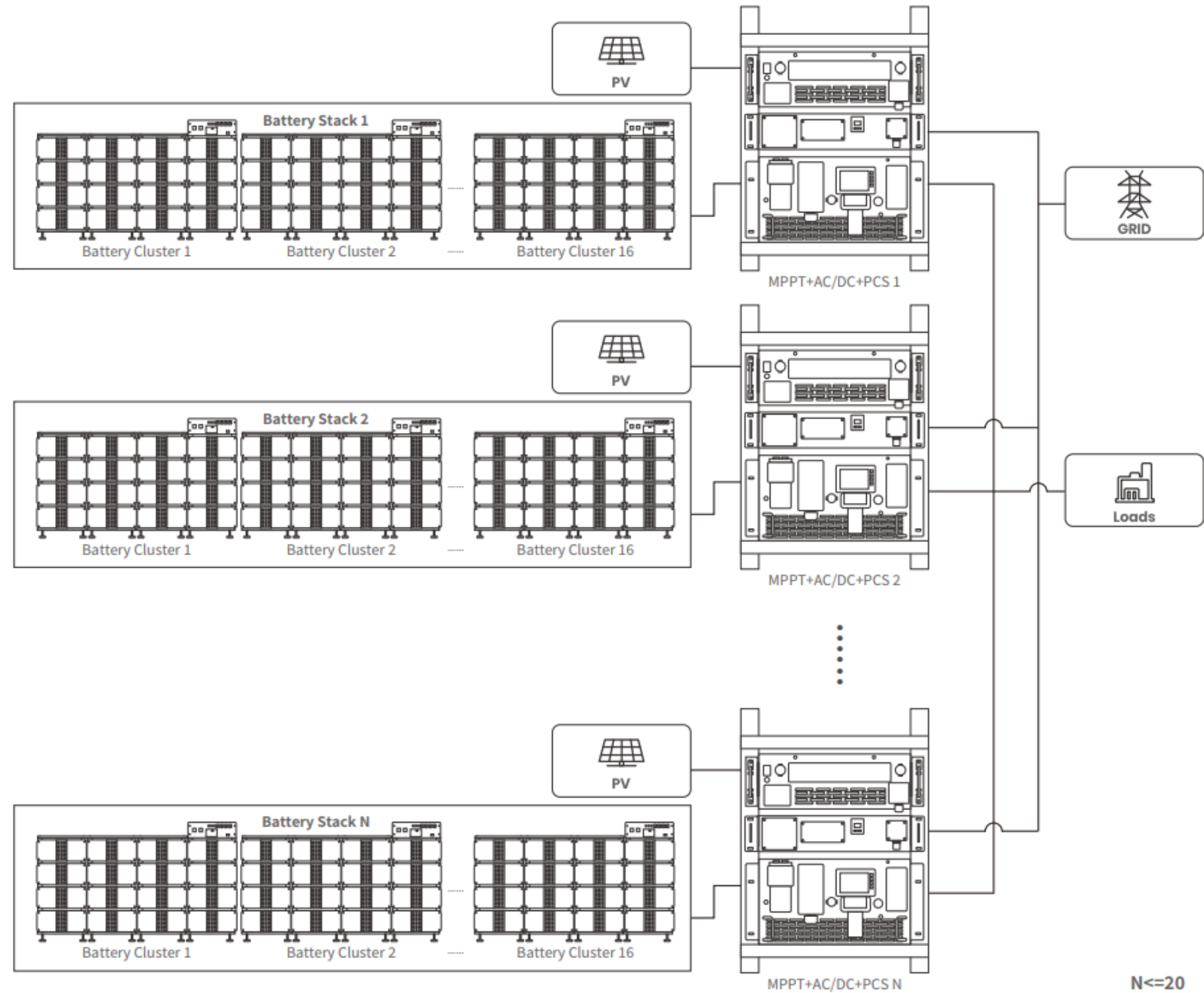
Battery



Battery Module Energy (kWh)	16.08
Battery Module Nomibal Voltage (V)	51.2
Battery Module Capacity (Ah)	314
Battery Module Qty in Series	5-16
Max. System Voltage (V)	819.2
Max. System Energy (kWh)	257.23
Matching Mode	16 Units
Maximum Stack Energy (up to 16 Clusters)	Up to 4MWh per Stack
Recommended Depth of Discharge	90%
Cycle Life	25±2°C, 0.5C / 0.5C, EOL70%≥6000
Warranty Period	10 years
Thermal Management	Smart fan cooling
Certification	CE / IEC62619 / IEC62040 / UN38.3



Typical Setup



*Up to 16 Battery Clusters per Battery Stack = 4MWh per stack



Remote Monitoring & Control



REAL-TIME MONITORING

See equipment and energy performance.



SMART DISPATCH

Intelligent charging / discharging strategies.



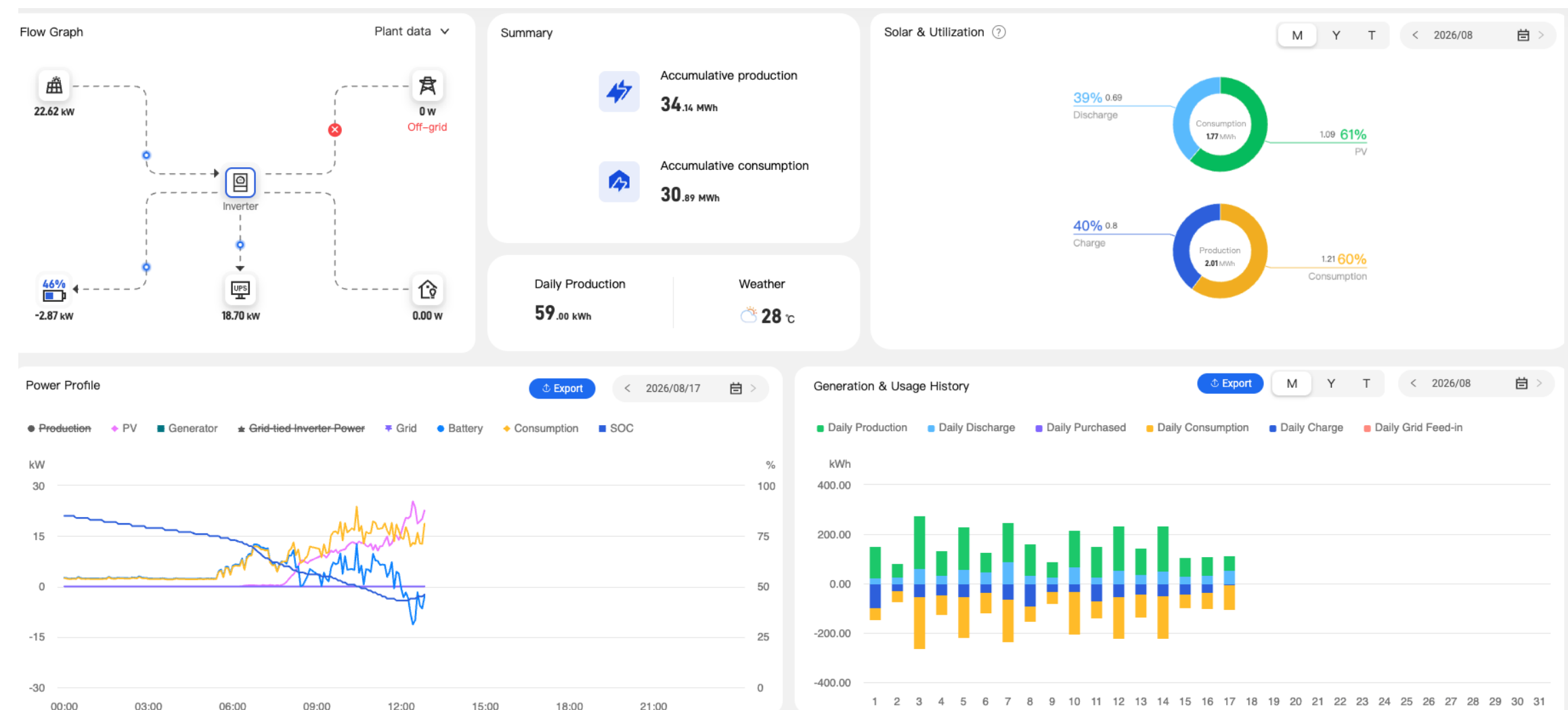
ENERGY SCHEDULING

Optimise when energy is used.



AI-ASSISTED SUPPORT

Deye Copilot / AI Assistant features





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