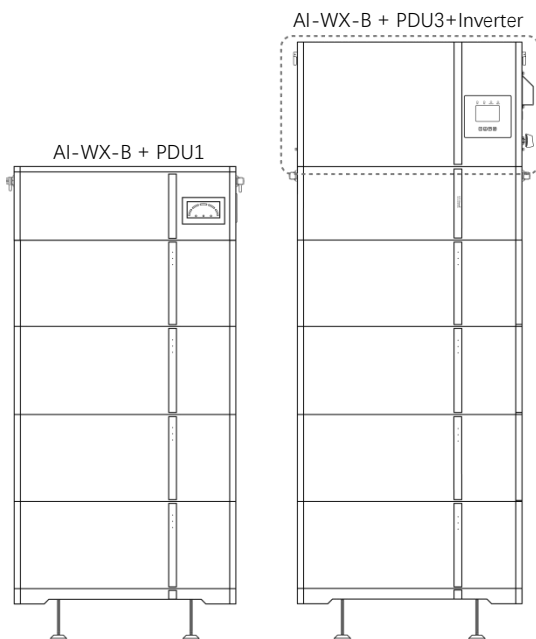


Rechargeable Li-ion Battery System

AI-WX-B

X=5.1/10.2/15.3/20.4/25.6/30.7

(PDU1, PDU3)



2 General Technical Requirements

2.1 Product Description

2.1.1 Product Features

- 1) The lithium iron phosphate battery is one of new energy storage products, which can be used to support reliable power for various types of equipment and systems. The whole module is non-toxic, non-polluting, and environmentally friendly.
- 2) This product has built-in BMS battery management system, which can manage and monitor cells information including voltage, current and temperature. What's more, BMS can balance cells charging and discharging to extend cycle life.
- 3) Cathode material is made from LiFePO_4 with safety performance and long cycle life.
- 4) Flexible configuration. Multiple batteries can be in parallel for expanding capacity and power.
- 5) Adopted self-cooling mode rapidly reduces system noise.
- 6) The module has less self-discharge, no memory effect, excellent performance of shallow charge and discharge.
- 7) Battery module communication address auto networking, easy maintenance, support remotely monitoring and upgrade the firmware.
- 8) High-power density: flat design, stack-mounted, saving installation space.
- 9) Restricted-current charging module can help improve battery life.

2.1.2 Application Scenarios

This energy storage system adopts a design where the same battery pack is compatible with two differentiated PDUs (Power Distribution Units). Both PDUs support external photovoltaic power supply and can realize core functions such as household load power supply, daily electricity supply and grid connection. The specific differences in configuration and operation mode are as follows:

- PDU1 Configuration and Function Implementation

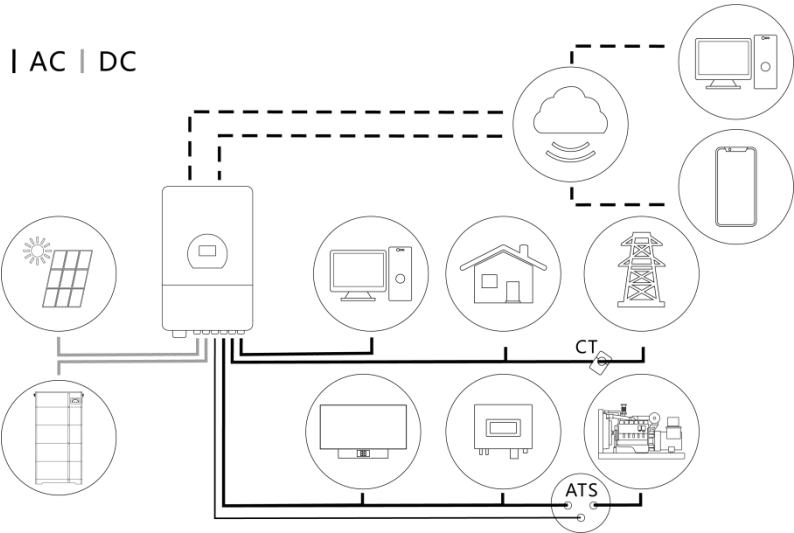
PDU1 must be used with an external matching inverter. It completes power conversion and regulation through the inverter, suitable for installation scenarios requiring flexible inverter matching.

- PDU3 Configuration and Function Implementation

PDU3 can be integrated with a matching inverter into an integrated design, directly realizing the same

core functions mentioned above. It is suitable for scenarios requiring compact installation and integrated operation and maintenance.

Consult with your system integrator for other possible system architectures depending on your requirements.



The picture is only a reference picture, please refer to the actual product, the final interpretation right belongs to DEYE.

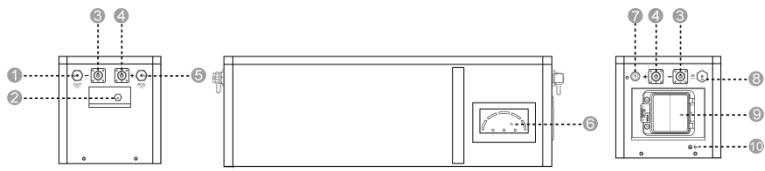
2.1.3 SN Code Description

Users can distinguish whether the battery pack is equipped with the heating function and check its production-related information via the SN Code.

SN code	No.	Description
056 XX XXX X X XX XXXX 1 2 3 4 5 6 7	1	Model/Version Code: 3-digit code(e.g., 056: without heating film)
	2	Production Line Code: 2-digit code, 01–99
	3	Customer Code: 3-digit code(refer to customer code table)
	4	Production Date - Year: 1-digit code(A for 2022, cycling A–Z)
	5	Production Date - Month: 1-digit code(1–9, A/B/C representing October–December)

4 Specific Technical Requirements for PDU1

4.1 Product Introduction



Left view		Front view		Right view	
①	Parallel Communication Port OUT	⑥	Status Indicator		
②	Air Vent Valve	⑦	BMS Switch		
③	Negative Battery Output Port	⑧	Parallel Communication Port IN		
④	Positive Battery Output Port	⑨	Circuit Breaker		
⑤	Inverter CAN/RS485 Port PCS	⑩	Protective Grounding		

Parallel Communication Port OUT

Sends battery pack status and control signals to other parallel-connected devices.

Air Vent Valve

Balances internal and external pressure of the device while preventing the ingress of contaminants such as water, dust, and oil.

Negative Battery Output Port

Provides the negative terminal connection for battery power output.

Positive Battery Output Port

Provides the positive terminal connection for battery power output.

PCS port

Inverter communication terminal: (RJ45 port) follow the CAN protocol (baud rate: 500K), used to output battery information to the inverter.

BMS Switch

Manually activates or deactivates the Battery Management System (BMS) control circuit.

Parallel Communication Port IN

Receives status and control signals from other parallel-connected devices.

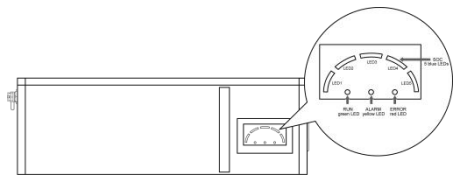
Circuit Breaker

Built-in overcurrent protection device. It automatically cuts off the circuit when the current abnormally exceeds the safe value, protecting the battery and equipment. A protective cover is fitted externally over the circuit breaker to shield it from external impacts and contamination.

Protective Grounding

Safety grounding terminal, ensuring reliable grounding of the metal enclosure to prevent electric shock risks.

Status Indicator



RUN LED: green, keep flashing when power switch is on.

ALARM LED: yellow, flashes when battery has alarm.

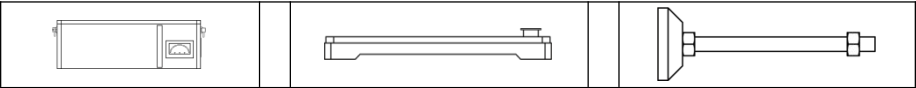
ERROR LED: red, long bright if battery is protected.

SOC LED: 5 blue LEDs, battery capacity indicator, each light represents 20% capacity.

Condition	RUN	ALARM	Error	LED1	LED2	LED3	LED4	LED5
Power off	off							
Charge	● Blink	● Blink if Alarm Exists	off	● Show SOC & highest LED blink				
Discharge or Idle		off	● Show SOC & long bright					
Alarm		● Blink	off	● Other LEDs are same as above				
System error/Protect		off	● long bright					
Upgrade	Blink Fast							
Critical Error	Blink Slowly							

4.2 Preparation for Installation

After unpacking, check that packing contents are intact and complete, and free from any damage. If any item listed in the Unpacking List is missing or damaged, contact your vendor.



12 Technical Specifications

Cell Chemistry		LiFePO ₄					
Module Energy (kWh)		5.12					
Module Nominal Voltage (V)		51.2					
Battery Module Number		Al-W5.1-B	Al-W10.2-B	Al-W15.3-B	Al-W20.4-B	Al-W25.6-B	Al-W30.7-B
Battery Module Quantity		1(Min.)	2	3	4	5	6
Battery Module Capacity (Ah)		100	200	300	400	500	600
System Operating Voltage (V)		44.8~57.6					
System Energy (kWh)		5.12	10.24	15.36	20.48	25.6	30.72
System Usable Energy (kWh) ^[1]		5.12	10.24	15.36	20.48	25.6	30.72
Charge/Discharge Current (A)	Max. ^[2]	1PDU+1pack:100; 1PDU+2pack:200; 1PDU+3pack:250; 1PDU+4pack:250; 1PDU+5pack:250; 1PDU+6pack:250 (1 PDU is compatible with at least 1 battery and at most 6 batteries)					
	Peak(10s,25℃)	1PDU+1pack:150; 1PDU+2pack:270; 1PDU+3pack:360; 1PDU+4pack:360; 1PDU+5pack:360; 1PDU+6pack:360 (1 PDU is compatible with at least 1 battery and at most 6 batteries)					
Operating Temperature		Charge: 0~55℃ (-20℃~55℃ when heating on) Discharge: -20℃~55℃					
Master LED Indicator		Battery module: 3LED (working, alarming, protecting)					
		PDU1 module: 5LED(SOC:20%~100%)&3LED (working, alarming, protecting)					
		PDU3 module: 5LED(SOC:20%~100%)&2LED (working, alarming)					
Communication Port		CAN2.0, RS485					
Humidity		5%~95%					
Altitude (m)		≤3000					
IP Rating of Enclosure		IP65(after stacking)					
PDU1 Dimension (W/D/H, mm)		720*255*240					
PDU3 Dimension (W/D/H, mm) (without terminal)		720*255*240					

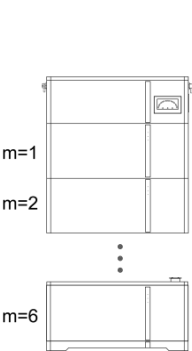
Battery Pack Dimension (W/D/H, mm) (without terminal)	720*255*300					
Base Dimension (W/D/H, mm) (without terminal)	720*255*68					
PDU1 System Dimension (W/D/H, mm)	720*25 5*608	720*25 5*908	720*25 5*1208	720*255 *1508	720*255 *1808	720*25 5*2108
PDU3 System Dimension (W/D/H, mm)	720*25 5*1008	720*25 5*1308	720*25 5*1608	720*255 *1908	720*255 *2208	720*25 5*2508
PDU1 Weight (kg)	18.5					
PDU3 Weight (kg)	18.5					
Battery Pack Weight (kg)	53					
Base Weight (kg)	6.5					
System Weight (kg)	53*m+25					
Installation	Floor-Mounted					
Storage Temperature (°C)	0°C ~ 35°C					
Recommend Depth of Discharge	100%					
Cycle Life	≥6000(25°C±2°C, 0.5C/0.5C, 90%DOD, 70%EOL)					
Certification	UN38.3, IEC62619, CE, VDE2510-50, CEI 0-21, CE-LVD(IEC 62040-1/IEC 62477-1), CEC					

[1]DC Usable Energy, test conditions: 100% DOD, 0.5C charge & discharge at 25°C. System usable energy may vary due to system configuration parameters.

[2]The current is affected by temperature and SOC.

[3] m: the number of battery packs in per cluster, 1 ≤ m ≤ 6. See the picture.

AI-WX-B + PDU1



AI-WX-B + PDU3+Inverter

