

**DOCAN POWER**

# 300W BATTERY PACK SPECIFICATION



**Product name:PX300W**

Customer acknowledgment stamp		Company acknowledgment stamp		R & D department	
Department		Department		Version	V2.0
				Latest effective date	2025-02-15
				Editor	Jingyang Shao
				Reviewer	
Effective date		Effective date	2025-02-15	Approver	

Version Change History Form			
Version	Major Change History Description	Editor	Effective date
V1.0	Initial release	Jingyang Shao	2024-03- 22
V2.0	Appearance optimization	Jingyang Shao	2025-02- 15

**Product acceptance and introduction**

Proper use and maintenance of the product ensures long-term reliable and stable operation of your battery (or battery system) ,After receiving the product, please check whether the packaging is intact. If the packaging is damaged, the product may be damaged. If there is any damage, please contact our after- sales or sales staff within seven working days.

Anyone who fails to use or maintain it according to the provisions of this manual will be deemed to have waived the warranty right. We and its service station have the right not to provide warranty, and will not compensate for all losses arising therefrom, but can provide corresponding paid services according to the situation. Please reply within seven working days after your company receives the product and product manual. If there is no reply within seven working days, our company will treat the customer as acknowledging that this product and product manual meet your requirements.

**Wall-mounted Battery Installation Guidelines**

The weight of this battery pack is 120KG. Before installation, it is necessary to determine the load-bearing capacity of the wall through professional structural assessment and by referring to the wall's design parameters to ensure the safety of the installation.

It is recommended to choose solid brick walls or reinforced concrete walls as the installation walls, as these walls have relatively strong load-bearing capacity. For ordinary residential walls, if they are hollow brick walls, gypsum panel walls, or other lightweight partition walls, they may not be able to bear the weight of the equipment, which is likely to lead to potential safety hazards such as wall damage and even the equipment falling off.

## 01.Product indicators

### 1.1 Product Overview

This product is a lithium iron battery pack. The battery pack consists of 16pcs 3.2V 300Ah lithium iron phosphate cells through 16 series and 1 parallel modes Combined. The battery pack adopts scientific internal structure design and advanced battery production technology. It has the characteristics of high specific energy and long life, safety and reliability, and wide operating temperature range. It is a green energy storage power supply product.

### 1.2 Parameter

Project	Parameter
Model	APEX 280L3
Nominal voltage (V)	51.2
Nominal Capacity (Ah)	300
Charge cut-off voltage (V)	58.4
Discharge cutoff voltage (V)	40
BMS	JK- PB2A16S20P 200A BMS
Communication	RS485,CAN,Bluetooth
Balance	2A active equalization
Display	4.3-inch touch screen
Length、Width、Height(mm)	860×538×288(mm)
Weight(kg)	120
Cells	16S1P Lifepo4 3.2V 300Ah
Material	Iron
Storage Temperature Range	0~40°C
Storage Ambient Humidity (RH)	<75%
Process	Painting
Thickness(mm)	1.5mm
Distance from Bottom to Ground	20mm
Charge retention capacity	After charging according to 3.2V standard charging, put it on hold for 28 days under standard test conditions, and then discharge according to 3.3V standard discharge,and the charge retention rate is $\geq 80\%$ .
Number of cycles	Cycle life not less than 6000 times, capacity retention rate $\geq 80\%$ . (Charge according to 3.2V standard charging and shelve for 0.5 to 1 hour; discharge according to 3.3 standard discharge and shelve for 0.5 to 1 hour, counting one cycle).
IP level	IP20

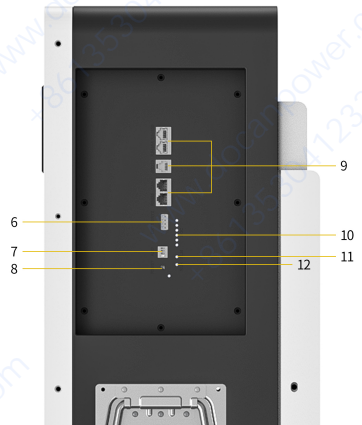
1.3 Pictures



- 1. Negative terminal(+)
- 2. DC breaker
- 3. Positive terminal(-)
- 4. Power switch

- 5. Touchscreen
- 6. Com1.com2
- 7. DIP switch
- 8. Reset button

- 9. CAN\RS485\RS232
- 10. Capacity indicator light
- 11. Alarm light
- 12. Run light



## 02.BMS parameters

### 2.1 Electrical specifications

Function name	Project list	Parameters	Set range
Single-cell overcharge protection	Single-cell overcharge protection voltage	3600mV	Can be set
	Single-cell overcharge recovery voltage	3550mV	Can be set
Single-cell under-voltage protection	Single-cell under-voltage protection voltage	2600mV	Can be set
	Single-cell under-voltage recovery voltage	2650mV	Can be set
	Single-cell undervoltage automatic shutdown voltage	2500mV	Can be set
Active balancing function	Balancing voltage difference trigger voltage	10mV	Can be set
	Balancing start-up voltage	3000mV	Can be set
	Maximum balancing current	1A	Can be set
Overall overcharge protection	Maximum charging current	25A	Can be set
	Charging overcurrent delay	2s	Can be set
	Charging overcurrent alarm release	60s	Can be set
	Charging overcurrent limit current	10A	/
Overall overdischarge protection	Maximum discharge current	150A	Can be set
	Discharge overcurrent delay	300s	Can be set
	Discharge overcurrent alarm release	60s	Can be set
Short circuit protection	Short circuit protection current	300A	/
	Short circuit protection delay	20us	Can be set
	Short circuit protection release	60s	Can be set
Temperature protection	Overcharge temperature protection	70°C	Can be set
	Overcharge temperature recovery	60°C	Can be set
	Over-discharge temperature protection	70°C	Can be set
	Over-discharge temperature recovery	60°C	Can be set
	Low-temperature charging protection	-20°C	Can be set
	Low-temperature charging recovery	-10°C	Can be set
	MOS over-temperature protection	100°C	Can be set
	MOS over-temperature	80°C	Can be set
	Recovery MOSFET over-temperature recovery	60°C	Can be set
	Battery alarm temperature Battery alarm recovery	50°C	Can be set

## 2.2. Status indication

Status	Operating status	ON/OFF	RUN	ALM	L1	L2	L3	L4	L5	L6	Illustrate
Shutdown	normal	off	off	off	off	off	off	off	off	off	
Balance	normal	on	Flash	off	According to the power display					off	
Charge	normal	on	Flash	off	According to the power display					off	
	Abnormal	on	Flash	Flash	According to the power display					off	
Discharge	normal	on	Flash	off	According to the power display					off	
	Abnormal	on	Flash	Flash	According to the power display					off	
Other	Abnormal	on	Flash	Flash	According to the power display					off	

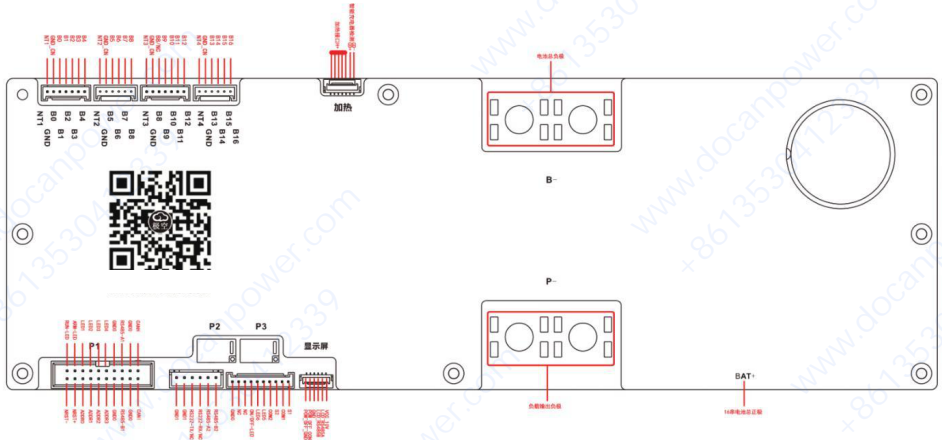
## 2.3. Capacity indicator instructions

Status		Charging					Discharging				
Capacity indicator light		L5	L4	L3	L2	L1	L5	L4	L3	L2	L1
Battery power(%)	0~20	off	off	off	off	on	off	off	off	off	on
	20~40	off	off	off	on	on	off	off	off	on	on
	40~60	off	off	on	on	on	off	off	on	on	on
	60~80	off	on	on	on	on	off	on	on	on	on
	80~100	on	on	on	on	on	on	on	on	on	on

## 2.4. Turn on or off

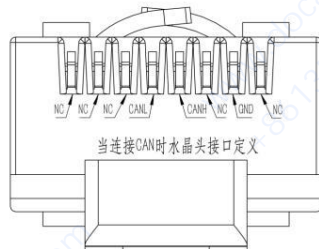
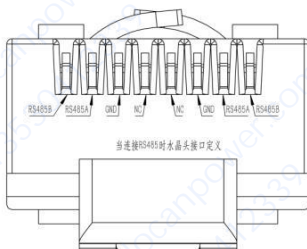
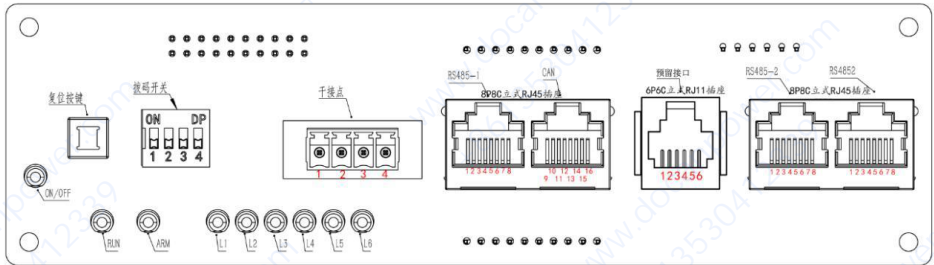
Number	Illustrate
1	Insert the button into the device screen interface, you can toggle the device on and off through the button,press to activate the device, long press to turn off the device.
2	You can also control the device on and off through the button on the screen, press to activate the device, long press to turn off the device.

## 2.5 Appearance of BMS



## 2.6 Interface definition

### Interface board interface diagram



Dry contact interface definition

PIN number	PIN definition	Note
1	COM1	When there is an alarm condition, S1 and COM1 are connected.
2	S1	
3	COM2	When in low battery condition, S2 and COM2 are connected.
4	S2	

CAN and RS485- 1 interface definition

RS485 uses an 8P8C vertical RJ45 socket		CAN uses an 8P8C vertical RJ45 socket	
PIN number	PIN definition	PIN number	PIN definition
1、8	RS485- B1	9、10、11、14、16	NC
2、7	RS485-A1	12	CANL
3、6	GND	13	CANH
4、5	NC	15	GND

RS232 interface definition

RS232 uses a 6P6C vertical RJ11 socket		
PIN number	PIN definition	Note
1、2、6	NC	
3	RS232_TX	
4	RS232_RX	
5	GND	

RS485-2 Parallel Interface Definition

Rs485 uses an 8P8C vertical RJ45 socket		CAN uses an 8P8C vertical RJ45 socket	
PIN number	PIN definition	PIN number	PIN definition
1、8	RS485- B1	9、16	RS485- -B2
2、7	RS485-A1	10、15	RS484-A2
3、6	GND	11、14	GND
4、5	NC	12、13	NC

### 03. Communication Description

#### RS232 communication

The device can communicate with the host computer via the RS232 interface, allowing monitoring of various battery information such as voltage, current, temperature, status, and battery production information . The default baud rate is 9600 bps.

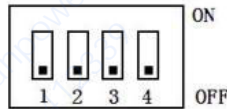
#### CAN communication

The default communication speed for CAN communication is 250 kbps.

#### Rs485 communication

There are two RS485 communication interfaces, one of which outputs two interfaces in parallel for viewing battery pack information . The default baud rate is 115200. Communication addresses can be set via DIP switches to poll all battery pack data, with address settings ranging from 0 to 15 .

DIP switch setting



When multiple battery packs are used in parallel, each battery pack needs to be assigned a unique address via DIP switches to ensure proper operation. Below is the DIP switch address table.

(Address)	(Dip switch position)			
	1	2	3	4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

## 04.How to use the battery pack

### 4.1 Charging

The charging terminal of the battery pack is connected to the suitable charger (the charging voltage is 58.4 V, do not connect it reversely) for charging.

### 4.2 Discharge

Pay attention to the positive and negative poles (as shown in the battery case logo, do not connect them reversely) and connect them to the matching load.

### 4.3 Battery pack test

The parameters of single battery and protection circuit are only standard test data when used as separate accessories and are for reference only.

### 4.4 Battery Pack Test Requirements

The tested battery pack has left the factory for no more than one month. If it is not tested due to other reasons such as transportation, the battery pack can be charged and discharged again and then tested.

All tests in this specification should be carried out under standard atmospheric conditions : temperature : 15-26 °C ; Relative humidity :  $65 \pm 20\%$ . The standard charging voltage of the battery pack is 58.4 V, the standard discharge cut-off voltage is about 40V, and the standard current is 0.2 C.

### 4.5 Standard charging

Use a special test cabinet for lithium-ion battery pack to charge with standard charging voltage, standard current, constant current and constant voltage until the current drops to 0.05 A.

### 4.6 Standard discharge

Use a special test cabinet for lithium-ion battery pack to discharge at standard current and constant current until the standard discharge cut-off voltage or the battery pack cut-off.

## 05.Warranty

**15** days free replacement

- Manufacturing defect bases
- Problem develop with normal use bases
- Battery pack with 10 years warranty
- Limited lifetime warranty

If problems develop out of free repair period, we will charge for parts.

## 06. Warnings

- (1) Do not use the battery if it has been pounded or if there is noticeable deformation.
- (2) Do not stack and assemble the batteries. Please be aware of the polarity of the battery and the connection ends.
- (3) Insulate equipment and utilize the tools and instruments properly.
- (4) Battery installation place should be away from fire source or any combustible objects. Make sure there is air flow and the air is dry enough in the place.
- (5) Plugging kits while the product is operating is strictly forbidden.
- (6) Employees other than technicians of our company is prohibited to operate any function module. Anyone violating the rule is at your own.
- (7) Please fully charge the battery with specific charger before using new batteries or using for a long duration.
- (8) Do not disassemble, open, squeeze, bend, deform, pierce or break the product.
- (9) Do not try to retrofit or plug in any exterior objects. Do not soak or expose the product in liquid such as salt or fresh water, beverage ( coffee, juice and so on) . Keep it away from fire source, explosive material or other dangers.
- (10) Do not short- circuit the battery. Do not let the battery connection ends have any contact with metal or other conductors.
- (11) Do not drop the battery. If it does happen (especially hitting a hard ground) , please contact the service center.
- (12) If there is any electrolyte leakage, do not let the battery have any contact with skin or eyes. If it does happen, flow the contact area with large quantity of fresh water or asking for medical stuff.
- (13) Do not disassemble the cell battery in any circumstance. It may lead to interior short circuit , even fire or other problems.
- (14) Do not burn the battery or put it to the fire in any circumstance. Otherwise, the battery may get into fire.
- (15) When multiple battery packs are connected in parallel, if your load is more than 200A, use multiple terminals in parallel output, because the terminals of the chassis cannot withstand more than 200A current,It is not recommended to use high current for a long time, because the cable and terminal will produce high temperature.



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