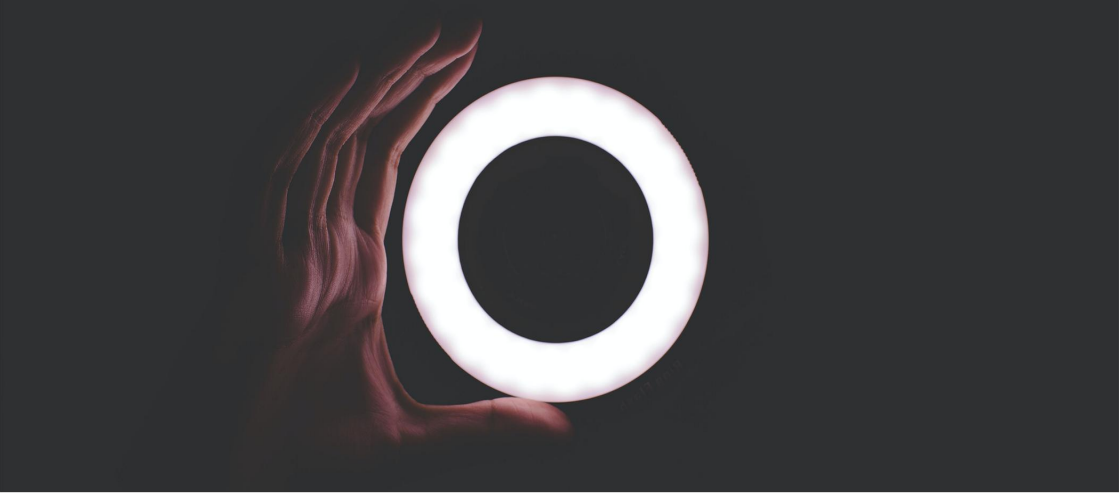# TEZE ®

START
GREEN
ENERGY
WITH

CORPORATE
BROCHURE

Shenzhen Teze Power is a focus on new energy battery research and development, production and sales as one of the high-tech enterprises.

COMPANY PROFILE

ShenZhen Teze power Co., Ltd. was established in 2022; The main products are lithium iron phosphate battery, 12V, 24V, 36V, 48V, lithium battery pack. Energy storage battery pack, portable power supply, mainly provides new energy battery products related to solar energy storage and outdoor power supply, widely used in household energy storage, UPS, industrial energy storage and so on. Is a new energy battery research and development, manufacturing and sales of high-tech enterprises. The company continues to expand the international market with high quality products and sell to all over the world. The company has strengthened quality management and established a set of advanced quality assurance system. The company has strong technical force and has a semi-automated production line with international level. The company has passed ISO9001 certification, and the products have passed CE, TUV, CB, KC, UN38.3, UL and other certifications. The company's production base covers an area of nearly 2000 square meters, with more than 60 employees. The company has introduced advanced equipment and instruments at home and abroad, and has carried out a number of technical exchanges and cooperation with well-known battery companies at home and abroad. Technological innovation to provide customers with perfect solutions. In response to the national goal of achieving carbon neutrality, reducing carbon emissions, and bringing green new energy to the world.

Roller Type Mobile ESS Battery

TEZE-MB51300-200A-HWB   TEZE-MB51300-100A-HWB
TEZE-MB51200-100A-HWB   TEZE-MB51150-100A-HWB
TEZE-MB48300-100A-HWB   TEZE-MB48200-100A-HWB
TEZE-MB48150-100A-HWB

Feature

*　Using lithium iron phosphate core technology, higher safety, 80% DOD charging and discharging under standard conditions, more than 6000 cycles.

*　High integrated analog front end, isolated power circuit.

*　Integrated serial port IC, high voltage accuracy ($\leqslant$ 20mV), high current accuracy ($\leqslant$ 2% @ FS).

*　4-way battery temperature detection ($\leqslant$ 2 ℃), SOC estimation function, SOH estimation function.

*　Short circuit protection function, adjustable overcurrent protection, multiple sleep and wake-up modes, low power consumption.

*　Dual RS485 communication, parameter adjustable setting,buzzer alarm function, LED status indication function, charginge qualization function.

*　Temperature range of battery: - 20 ℃~60 ℃.ÿ

*　Support parallel (up to 15 groups) application expansion .

Application

Standby power supply and household energy storage.
Solar and wind energy systems.

Application scenario > > >

Contents

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Guangdong
TEL :0755-23225527 FAX:0755-23225537

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1. Safety tips

1.1 Preface

Thanks for choosing TEZE New Energy power wall battery. In order to make you better use and maintain this product, please read the user manual carefully before use.

The features of this product are as follows:

1. Adopt brand new lithium iron phosphate cell; Higher security; In the standard state, 100% DOD charge-discharge ≥4000 times cycle；
2. Highly integrated analog front end; Isolating power supply circuit;
3. Integrated serial port IC, high voltage accuracy (≤20mV), high current accuracy (≤2%@FS);
4. Four-channel battery temperature detection (≤2℃), SOC estimation function, SOH estimation function;
5. Short-circuit protection function, adjustable overcurrent protection, a variety of sleep and wake up mode, low power consumption;
6. Dual-port RS485 communication, parameter adjustable setting, buzzer alarm function, LED status indicator function, with charge balance power;
7. Wide temperature range: -20℃~60℃;
8. Parallel connection (up to 15 groups) application expansion is supported, but serial connection is not recommended.

1.2 Safety disclaimer

When installing, using and maintaining this product, users must read this chapter carefully and follow the safety precautions required in this chapter. Any injuries and losses caused by illegal operation are not related to our company.
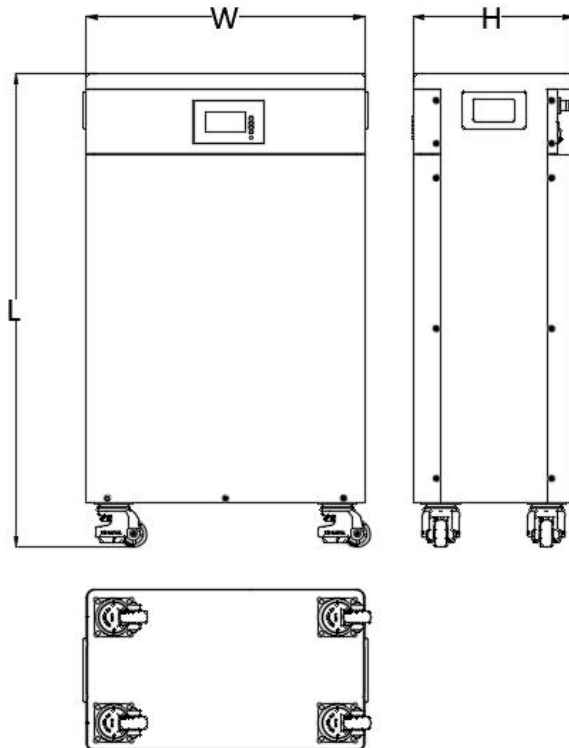
1.3 Description of safety matters

1. Keep the battery out of the reach of children and babies;
2. Do not put the battery in the oven or other similar equipment;
3. Do not remove the product label;
4. Do not try to open the battery pack;
5. Do not be exposed to the environment above 60℃(300F);
6. Do not short-circuit the positive and negative terminals of the battery with wires or other metal objects. Do not transport or store batteries with metal objects;
7. Do not expose the battery to direct heat or flame. Do not use or store batteries near fire or high temperature;
8. Do not immerse the battery in water, salt water or any other liquid or make it wet;
9. Do not pierce the battery with any sharp object, knock it with a hammer or similar device, step on it, fall it or get strong vibration;
10. Do not use the battery if it is damaged or deformed;
11. If the battery produces odor, smoke or abnormal heat, please stop using it immediately;
12. If the battery liquid leaks and comes into contact with your eyes, please don't rub your eyes, and immediately rinse them with plenty of water before seeking medical assistance.

2 Product description

2.1 Product dimension

| Model	Size （L*W*H）
TEZE- MB51300-200A-HWB	
TEZE- MB51300-100A-HWB	900*520*300mm
TEZE- MB48300- 100A-HWB	
TEZE- MB51200- 100A-HWB	
TEZE- MB48200- 100A-HWB	750*520*300mm
TEZE- MB51150- 100A-HWB	
TEZE- MB48150- 100A-HWB	

2.2 Product details

Display

Negative Pole   Positive Pole

Air Switch

Balance Switch

Power Switch

Communication Area

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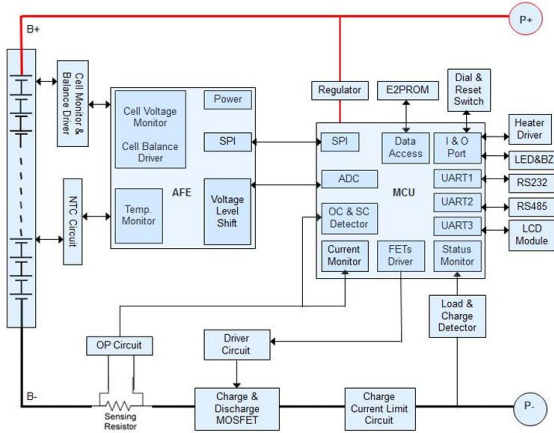TEL :0755-23225527 FAX:0755-23225537

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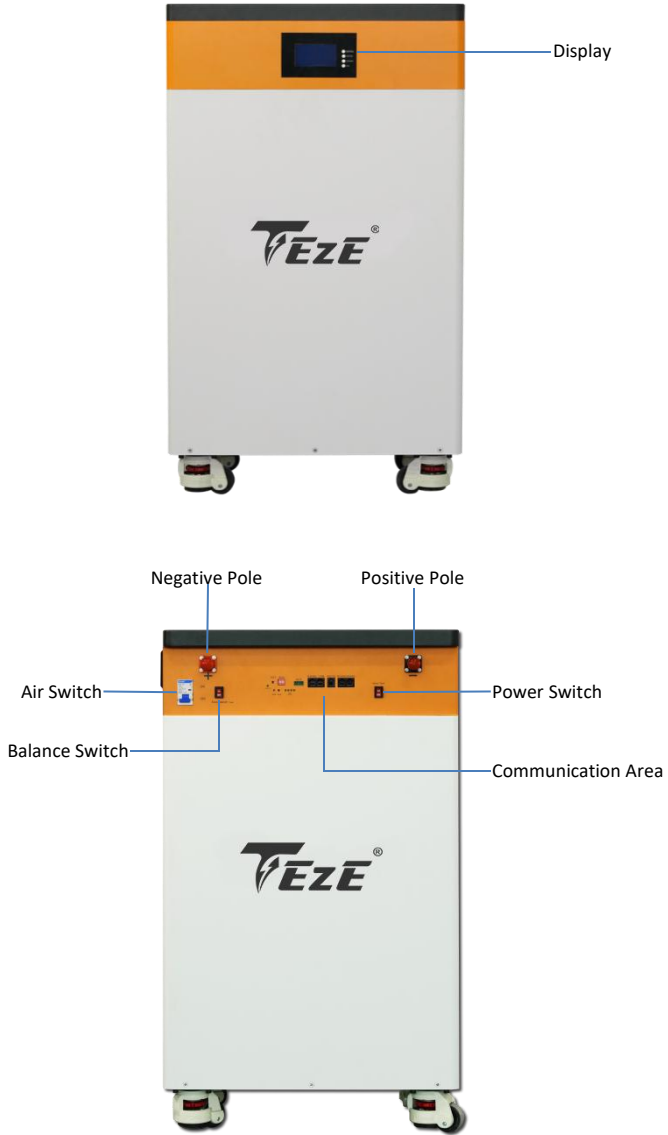
2.3 Electrical schematic diagram

3 Technical specifications

Table 1 Technical specification table

No.	Project	Specifications						
1	Model	TEZE- MB51 300-200A- HWB	TEZE- MB51 200- 100A- HWB	TEZE- MB51 150- 100A- HWB	TEZE- MB51 300- 100A- HWB	TEZE- MB48 300- 100A- HWB	TEZE- MB48 200- 100A- HWB	TEZE- MB48 150- 100A- HWB
2	Nominal capacity	300Ah@ 0.2C	200Ah@ 0.2C	150Ah@ 0.2C	300Ah@ 0.2C	300Ah@ 0.2C	200Ah@ 0.2C	150AH@ 0.2C
3	Nominal voltage	51.2V				48.0V		
4	Charging voltage	56.8-57.6V				53.2-54.0V		
5	Operating voltage	43.2V~58.4V				40 . 5V~54.75V		
6	Charging current	60A	40A	30A	60A	60A	40A	30A
7	Standard charging mode	At a temperature of 25°C, charge to 58.4V with a constant current of 0.2C, and then change continuously with a constant voltage of 58.4V until the current is not greater than 0.02C.				At a temperature of 25°C, charge to 54.75V with a constant current of 0.2C, and then change continuously with a constant voltage of 54.75V until the current is not greater than 0.02C.		
8	Maximum charging current	180A	80A					
9	Maximum discharge current	200A	100A					
10	Charging temperature	0°C to 45°C (32°F to 113°F) @60± 25% relative humidity						
11	Discharge temperature	-20°C to 60°C (-4°F to 140°F) @60± 25% relative humidity						
12	Storage temperature	-20°C to 60°C (-4°F to 140°F) @60± 25% relative humidity						

![TEZE logo]

13	Line joint	250A Self- Locking Fitting Quick Release Connector	120A Self- Locking Fitting Quick Release Connector					
14	Net Weight Approx.	136kg	97kg	86kg	136kg	132kg	94kg	84kg
15	Communication protocol	RS485、RS232、CAN						
16	Support inverter brand	Growatt、Deye、Goodwe、Voltronic 、Sofar、VICTRON、Megarevo、SRNE、PYLON、Luxpowertek、Sorotec、SMA、GINLONG、MUST、TBB、STUDER						

4 BMS characteristics

4.1 Instructions for LED lights

Picture 3 Battery indicator lamp

Four green capacity indicators, a red alarm indicator, a green running indicator and a switch indicator.

4.1.1 SOC capacity indicator

Table 2 SOC indicator status table

Condition		Charge				Discharge			
Capacity indicator lamp		L1	L2	L3	L4	L1	L2	L3	L4
power （%）	0~25%	Flash 2	OFF	OFF	OFF	ON	OFF	OFF	OFF
	25~50%	ON	Flash 2	OFF	OFF	ON	ON	OFF	OFF
	50~75%	ON	ON	Flash 2	OFF	ON	ON	ON	OFF
	75~ 100~	ON	ON	ON	Flash 2	ON	ON	ON	ON
Running indicator light		ON				Flash 3			

4.1.2 Status indicator

Table 3 Status indicator status table

Status	Warning/Normal/ Protection	ON/OFF	Run	Alert	LED Battery Level Indicator				explain
		●	●	●	●	●	●	●	
Shut down	Sleep mode	ON	OFF	OFF	OFF	OFF	OFF	OFF	Light off
Standby	normal	ON	Flash 1	OFF	According to the electricity indication				standby mode
	warning	ON	Flash 1	Flash 3					Module low voltage
charge	normal	ON	ON	OFF	According to the power indicator (the maximum LED of the power indicator flashes 2)				The maximum power LED flashes (flash 2),and the ALM does not flash during the overshoot.
	warning	ON	ON	Flash 3					

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	Overcharge Protection	ON	ON	OFF	ON	ON	ON	ON	If there is no mains supply,the indicator turns to standby
	Temperature,over current,failure, protection	ON	OFF	ON	OFF	OFF	OFF	OFF	stop charging
discharge	normal	ON	Flash 3	OFF	According to the electricity indication				
	warning	ON	Flash 3	Flash 3	According to the electricity indication				
	UVLO	ON	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharge
	Temperature, overcurrent, short out, reversed	ON	OFF	ON	OFF	OFF	OFF	OFF	Stop discharge
Invalid	polarity ,FAIL-SAFE	OFF	OFF	ON	OFF	OFF	OFF	OFF	Stop charging and discharging

Table 4 LED flashing description

Flashing mode	ON	OFF
Flash 1	0.25s	3.75s
Flash 2	0.5s	0.5S
Flash 3	0.5s	1.5s

4.2 Boot and sleep mode

Sleep mode: the battery will be in sleep mode if any of the following conditions are met
1)   The battery or battery pack over discharge protection lasts for 30 seconds and is not released.
2)   Press the power on / off button for 3 seconds and release.
3)   The minimum voltage of the battery is lower than the "sleep voltage" setting in the setting, without charging and discharging.
4)   Standby for more than 24 hours without charging and discharging.
5)   Switch to the upper computer for sleep manually.
Wake up: the battery will exit sleep mode if any of the following conditions are met
1)   Charger is plugged in; The charger voltage is greater than 48V.
2)   Press the power on / off button for 3 seconds and release.
3)   Plug in the communication cable and open the upper computer software (not available if it is under over discharge protection).
**Note:** if over discharge protection is enabled, the battery will be in sleep mode. The battery will wake up automatically every 4 hours and turn on the charge / discharge MOS. If charging is available, the battery will be charged, otherwise it will return to sleep mode. If it has been awakened 10 times but cannot be charged, the battery will not wake up again automatically.
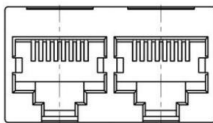
4.3 Communication area

Picture 4 Communication interface diagram

1. RS232: BMS can communicate with upper computer through RS232 interface, so as to monitor various information of battery, including battery voltage, current, temperature, status and battery production information, etc. the default baud rate is 9600bps.
2. RS485: with dual RS485 interface, you can view the information of pack. The default baud rate is 9600bps.If it is necessary to communicate with the monitoring equipment through RS485, the monitoring equipment is used as the host, polling data according to the address, and the address setting range is 1 ~ 15.
3. CAN: CAN communication, baud rate 9600bps.
4. RS485 and CAN: The user can communicate with the inverter through these two interfaces.
5. RS485 add RS232: The users can connect to the computer through these two interfaces.
6. DCT: Dry contact interface.
7. Rst: reset button.
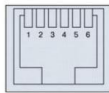8. ADS: dial switch
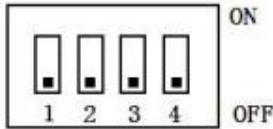
9. Interface diagram

CAN and RS485 interface   Dry contact
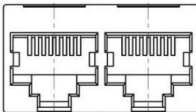
Parallel communication port   communication interface

10. Definition of electrical interface

RS232 -- 6P6C vertical RJ11 plug	
RJ11 pin	Definition Description
2	NC
3	TX(Single board)
4	RX(Single board)
5	GND

Table 5 RS485 and CAN Interface

RS485 - 8P8C vertical RJ45 socket		CAN - 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description	RJ45 pin	Definition Description
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

Table 6 Parallel communication port

RS485 - 8P8C vertical RJ45 socket		RS485 - 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description	RJ45 pin	Definition Description
1、8	RS485-B	9、16	RS485-B
2、7	RS485-A	10、15	RS485-A
3、6	GND	11、14	GND
4、5	NC	12、13	NC

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![TEZE logo]

5. Description of parallel connection

5.1 Parallel Connection Diagram

If parallel batteries are required, connect the wires according to the diagram, max support for 15 batteries in parallel

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![TEZE logo]
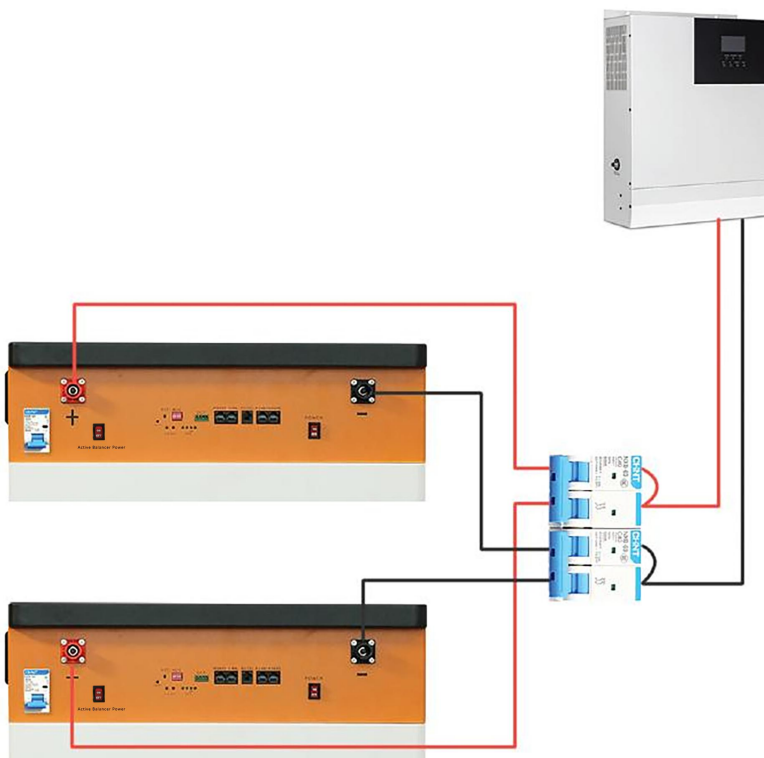
5.2 Communication line parallel diagram

The signal line connected to the inverter should use RS485 communication line or CAN communication line. If it is necessary to use batteries in parallel:

① RS485 cable shall be used to connect the parallel communication port. Refer to the communication line parallel diagram;

② The address of the battery needs to be set. Refer to the dial switch setting table for address setting.

Table 7 The Dial Switch Setting Table

Address	Dial switch position			
	#1	#2	#3	#4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	ON	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
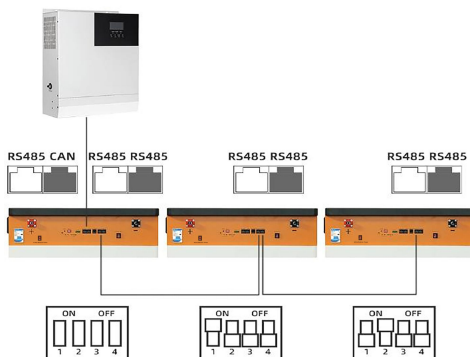
6. Operating instructions

6.1 Operating instructions of the display screen

6.1.1 Introduction of LCD Display

Button Description:
MENU: enter the management system.
ENTER: enter the submenu.
DOWN: moves the cursor down or to the next page.
ESC: returns to the previous one

6.1.2 Boot screen

Battery protection status:
Overvoltage: OV
Low voltage: LV
Overtemperature: OTt
Low temperature: IT
Over current: OC
Short circuit: SC
Note: when the battery is protected, the corresponding protection status will be displayed; otherwise, the protection status will not be

Press "MENU" to enter the main menu
Note:"》"indicates that there is a submenu. Press "enter" to enter the submenu

Analog Info	》
BMS Status	》
Para Setting	》
Sys Setting	》

Move the cursor to Analog info and press enter
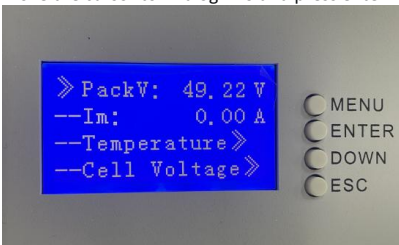
Pack V	
Im	
Temperature	》
Cell Voltage	》
CellCapacity	》

Move the cursor to "temperature" and press "enter" to check the battery temperature information, then press "down" to turn the page

T1	XX℃
T2	XX℃
T3	XX℃
T4	XX℃
PCB-T	XX℃
ENV-T	XX℃

Move the cursor to "cell voltage" and press "enter" to check the battery voltage information, then press "down" to turn the page

Cell 01	xxxxmV
Cell 02	xxxxmV
Cell 03	xxxxmV
Cell 04	xxxxmV
Cell 05	xxxxmV
Cell 06	xxxxmV
Cell 07	xxxxmV
Cell 08	xxxxmV
Cell 09	xxxxmV
Cell 10	xxxxmV
Cell 11	xxxxmV
Cell 12	xxxxmV
Cell 13	xxxxmV
Cell 14	xxxxmV
Cell 15	xxxxmV
Cell 16	xxxxmV

Move the cursor to "CellCapacity" and press Enter to check the battery capacity information

SOC	X%
FCC	XAH
Rm	XAH
CC	0

Move the cursor to "BMS Status", press Enter to check the battery status, and press "▼" to turn the page

Status	
Record	》
BMS Status	》

Move the cursor to "Record", then press "Enter" to check the battery alarm information, then press "DOWN" to turn the page.
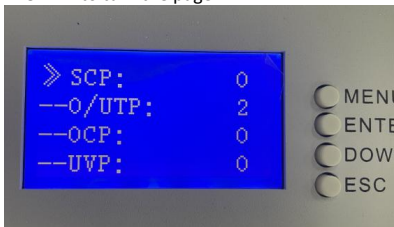
SCP	
0/UTP	
0CP	
UVP	
0VP	

Move the cursor to "BMS Status", then press "Enter" to check the battery protection information, and then press "DOWN" to turn the page.
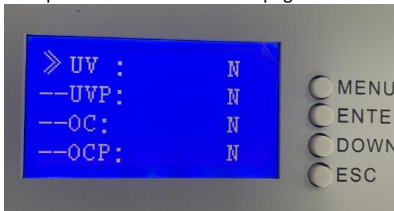
UV	Y/N
UVP	Y/N
OC	Y/N
OCP	Y/N
OT	Y/N
OTP	Y/N
OV	Y/N
OVP	Y/N
SCP	Y/N
Failure	Y/N

Move the cursor to "Para Setting" and press "Enter" to check the gyroscope information, then press "▼" to turn the page.
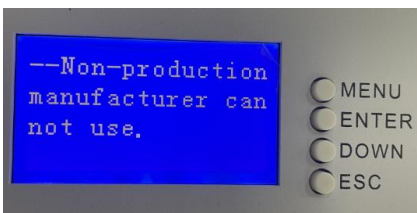
Move the cursor to "Sys Setting", then press Enter to check the version information, and then press "▼" to turn the page.

Hibernation and activation functions
After 1 minute of button-free operation in normal operation, the display will turn off (backlight only), and pressing any button while the screen is off will allow the screen to light up and function normally.

7. Active Equilibrium Function

7.1 Overview

Because the battery capacity, internal resistance, voltage and other parameter values are not completely consistent, this difference causes the battery with the smallest capacity to be easily overcharged and discharged during charging, and the smallest battery capacity becomes smaller after damage, entering a vicious cycle. The performance of single battery directly affects the charge and discharge characteristics of the whole battery and the reduction of battery capacity. BMS without balance function is just a data collector, which is hardly a management system. BMS active equalization function can realize the maximum continuous 1A equalization current. Transfer the high-energy single battery to the low-energy single battery, or use the whole group of energy to supplement the lowest single battery. During the implementation process, the energy is redistributed through the energy storage link, so as to ensure the battery consistency to the greatest extent, improve the battery life mileage and delay the battery aging.

7.2 Technical indicators of the main parameters

qualification	Data specification
Balance current	0.5~1A
Balance mode	Active equilibrium
Balance on condition	Reach the user-defined opening voltage and differential pressure Minimum voltage of single unit ≥ 3.2V (factory default) and equalizing opening differential pressure: ≥50mV (factory default)
Balance closing condition	Closing voltage and differential pressure reaching the user-defined setting Minimum voltage of single unit ＜ 3.2V (factory default) and equalizing differential pressure: ＜ 50mV (factory default)
Working power consumption	<11mA
Sleep current	300uA
working temperature	-20℃～60℃
Data Monitoring	Bluetooth APP
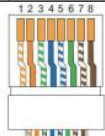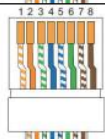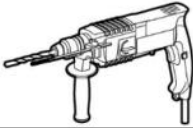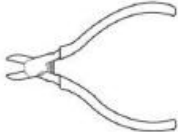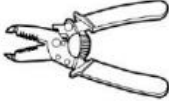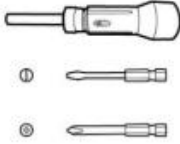
8. Product list and tools

8.1 Product packing lists

Home energy storage system series power supply has been strictly inspected before delivery, but may be damaged in transit, therefore, after unpacking the box, please check whether the following items are complete, confirm the model, capacity, input voltage and output voltage, and whether the specified content when ordering; If anything abnormal or inconsistent occurs, please contact the distributor as soon as possible.

	Picture				Description	Qty
Home energy storage battery						1 pieces
Product manual						1 pieces
Positive/negative connector plug						Positive/negative each one
Signal line(Optional)	CAN	Connect inverter	RJ45			4-CAN-H 5-CAN-L
	RS485	Connect inverter	RJ45			1、8-RS485-B 2、7-RS485-A

8.2 Prepared tools and instruments

Type	Tools and instruments		
erecting tools			
Personal protective tool			

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9. Instruction manual

1. Place the battery in an appropriate position, plug the positive/negative connector into the positive/negative socket.
2. Connect the other end of the positive and negative lead to the inverter.
3. Turn on the rocker switch and the air switch.
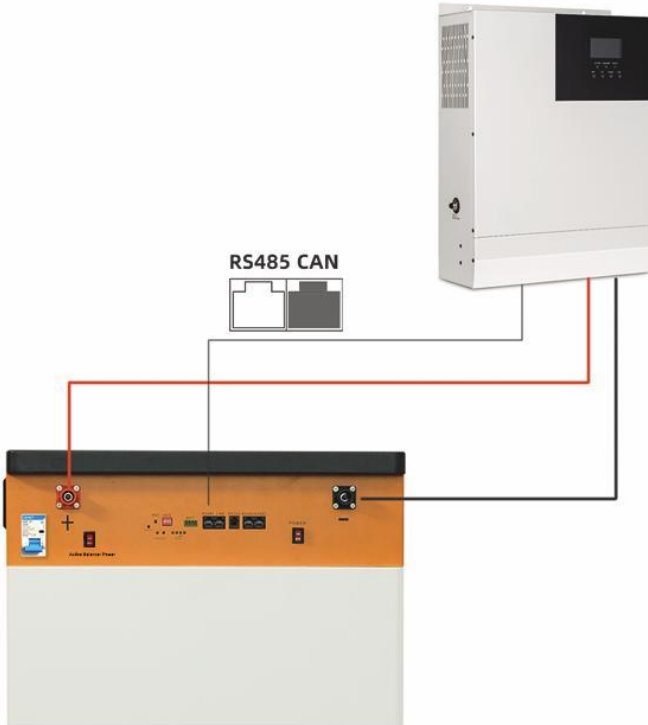
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About Us

Email
service@tezepower.com

TEL/FAX
86-755-23225527

Whatsapp
+86 18814301918

Wechat
+86 18814301918