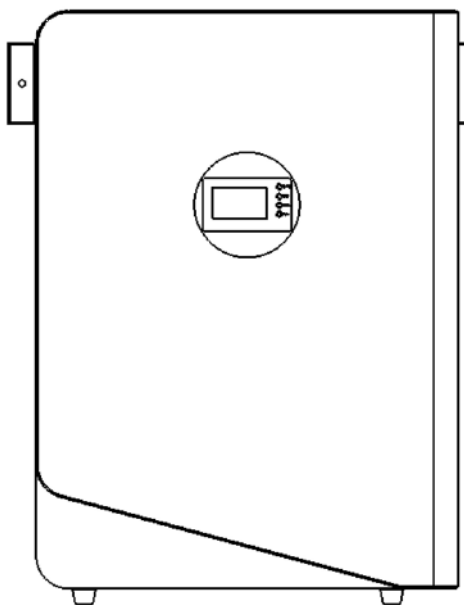


## AU51105-W

51.2V-105Ah Wall Mounted  
Battery Operating Instructions



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## About this manual

This manual is intended for the AU 5 . 3 kWh Energy Storage battery.

## Product Liability Statement

1 Austa accepts no liability for accidents caused by failure to follow these instructions. Ltd. will not be responsible for any accident caused by the operation not in accordance with the provisions of this manual.

2 Before using the product, please read the instruction manual carefully to understand how to use the product.

3 If the use of the product does not match the parameters specified in the manual, it is improper use.  
The company will not be responsible for any damage to the product or other peripheral connectors caused by improper use.

4 The Company reserves the right to interpret this manual.

5 The Company reserves the right to modify this manual, the Company has the right to modify this manual without prior notice.  
We reserve the right to modify this manual without prior notice.

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## 1. Safety Introduction

### 1.1 Important Safety Instructions








This manual contains important instructions for:

**AU 5 . 3 kWh LV Energy Storage product and this manual must be followed when installing and using this product.**

This product is designed and tested in accordance with international safety requirements CE and IEC 62619, but as with all electrical and electronic equipment, certain precautions must be observed when installing and operating the product. To reduce the risk of personal injury and ensure the safe installation and operation of the product, you must read carefully and follow all instructions, cautions and warnings in this manual.

### 1.2 Warnings in this Document

A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice which if not correctly performed, could result in damage to or destruction of part or all of the Austa equipment and/or other equipment connected to the equipment or personal injury.

Symbol	Description
	Caution, risk of electric shock
	Heavy enough may cause severe injury
	Keep the battery away from open flame or ignition sources
	Keep the battery away from children
	Do not dispose of the product with household waste
	Recycling
	Read this manual before installation and operation

For safety reasons, installers are responsible for familiarizing themselves with the contents of this manual and all warnings before performing installation.

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### 1.3 Battery Handling Guide

- Use the battery pack only as directed.
- If the battery defective, appears cracked, broken or otherwise damaged, or fails to operate, contact the Austa **hot line +86 574 89137130** immediately.
- Do not attempt to open, disassemble, repair, tamper, or modify the battery.
- To protect the battery and its components from damage when transporting, handle with care.
- Do not subject it to any strong force.
- Do not insert foreign objects into any part of the battery pack.
- Do not use cleaning solvents to clean the battery.

### 1.4 Response to Emergency Situations

The Austa battery is designed with multiple safety strategies to prevent hazards resulting from failures. However, Austa cannot guarantee their absolute safety for uncertain situations.

#### 1.4.1 Leaking Batteries

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. Electrolyte is corrosive and contact may cause skin irritation and chemical burns. If one is exposed to the leaked substance, do these actions:

Inhalation: Evacuate the contaminated area, and seek medical attention immediately.

Eyes contact: Rinse eyes with flowing water for 15 minutes, and seek medical attention immediately.

Skin contact: Wash the affected area thoroughly with soap and water, and seek medical attention immediately.

Ingestion: Induce vomiting as soon as possible, and seek medical attention immediately.

#### 1.4.2 Fire

Fire-fighting method: The battery contains fire-fighting aerosol, which will trigger the fire-fighting eruption when there is a short-circuit or high temperature out-of-control fire inside the battery and feed back to the BMS to protect the cut-off function.

In case of a fire, make sure that an ABC or carbon dioxide extinguisher is near by and does not use water to extinguish the fire.



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If a fire breaks out where the battery is installed, do these actions:

1. Extinguish the fire before the battery catches fire.
2. If the battery has caught fire, do not try to extinguish the fire. Evacuate people immediately.

## WARNING

**If the battery catches fire, it will produce poisonous gases. Do not approach.**

### 1.4.3 Wet battery

Do not immerse the battery and accessories in water or other liquids and protect them from moisture. If the battery is wet or submerged in water, do not try to access it. Contact Austa **hot line** or your distributor for technical assistance.

### 1.4.4 Damaged Battery

If deformation or leakage is found during use, do not use the battery again and send it to the battery manufacturer for repair as soon as possible. If the battery is damaged, please contact Austa **customer service** or your distributor for help as soon as possible, because a damaged battery is dangerous and must be handled with extreme caution. A damaged battery is not suitable for use and may pose a danger to people or property. If the battery seems to be damaged, return it to Austa or your distributor.

## CAUTION

**Damaged battery might export electrolyte or flammable gas, so contact Austa for advice and information immediately we will deal with it.**

## 1.5 Installers

Austa Energy Storage battery is suggested to be installed by a skilled worker or electrician.

A skilled worker is defined as a person who has been trained and qualified as an electrician or has all of the following skills and experience:

- Knowledge of the functional principles and operation of on-grid Energy Storage systems.
- Knowledge of the dangers and risks associated with installing and using electrical devices and acceptable mitigation methods.
- Knowledge of the installation of electrical devices
- Knowledge of and adherence to this manual and all safety precautions and best practices.

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## 1.6 Notes on use

Short-circuiting of the positive and negative outputs should be avoided. It is prohibited to use this battery in series or parallel with other models and other manufacturers' batteries.

## 1.7 Scrap Battery

For scrap battery(-ies), please treat with local laws or regulations to recycle or scrap.

## 1.8 Contact Information

Use the contacts for technical assistance. The phone numbers are available only during business hours on weekdays.

<b>Fax</b>	+86 574 89137130
<b>Email</b>	marketing@osdasol.com
<b>Address</b>	No.136.Haichuan Rd.,Jiangbei District 315600 Ningbo,P.R.C

## 2.Guidance for Disconnection of Batteries During Shipment

- Battery packs should be suitable for transportation by car, train, airplane, etc., but sunshine, rain and violent vibration should be avoided during transportation.
- Battery packs should be packed with insulated shockproof materials and labeled with fragile characters to avoid damage to the battery packs caused by bumps on the way.
- Should use the group pole column facing upwards, and mark the good upward labeling, do not put upside down, sideways, etc..
- During transportation, it must be gently held and put down, do not throw it randomly to avoid collision.
- Do not press heavy objects on top of the battery pack during transportation to avoid damage caused by extrusion.
- Do not mix with flammable and explosive, sharp metal objects, etc. for transportation.
- During loading, unloading and transportation, if the forklift crashes the product or inserts and drops the product, you must notify us in time, inform us of the detailed information and the corresponding pictures, such as the state of the product (whether it is deformed, water, heat, etc.), and do a good job of marking and isolation, and we will tell you how to deal with it, because these may bring safety problems.

### 3. Product Introduction 3.1 Technical Specifications

Model	AU51105-W
<b>Technical description</b>	
Dimensions (w×h×d)	520.5*714*197.5mm (±5mm)
Life cycles	≥10000@0.5C
Charging operating temperature	0 C ~45 C
Discharge operating temperature	-10 C ~55 C
Operating voltage range	40V~58.4V
Protection class	IP65
Cooling	Natural cooling
Fire Fighting methods	Aerosolsc
Communication method	485/CAN (customisable)
Weights	64±2KG
Rated capacity (KWh)	5.12
Available capacity (KWh)	4.60
Battery module (single-pack)	51.2V-105Ah
Number of modules (for the whole system)	1
Cell type	IF105 (3.2V-105Ah)
Cell configuration (whole system)	16S/1P
Rated Voltage (V) (whole system)	51.2
Operating voltage range (V)	44.8-57.6
Rated Continuous current (A)	50A (0.5C )
Rated power (KW)	2.56(0.5P)
Maximum discharge current (A)	100(1C)
Maximum discharge power (KW)	4.9
Charging operating temperature is ( C )	Charge: 0 C ~50 C / discharge: -20 C ~50 C
Storage temperature ( C )	-20-45 C (one month) 0-35 C (1 year) SOC: 50%
Humidity (%)	≤95
Height (M)	≤2000M
Levels of protection	IP65
Heat dissipation method	Natural heat dissipation
Fire-fighting mode and trigger time	Hot start aerosol with feedback BMS protection lead device; Protection space: 0.8m³, trigger time: 3S
Way to install	Wall mounting type
Rated capacity	Test conditions: cell voltage 2.5V-3.65V, 25 ± 3 C temperature range, 0.5C charge and discharge
Active volume	Test conditions: 90% discharge depth, 25 ± 3 C temperature range, 0.5C charge and discharge

<b>BMU module parameters</b>	
Typology	15-16 string charge and discharge the same port
Continuous discharge current	≤100A (configurable)
Maximum discharge current	110A (0-10S )
Charging voltage	57.6V supports wide voltage operation
Charging current	≤50A (ssettable )
Overcharge charging voltage	3.60±0.01V (configurable)
Overcharge release voltage	3.40±0.01V (configurable)
Balanced way	Charge equalisation
Equalizing current	≤100±10mA
Balanced start voltage	3400mV±10mV
Overdischarge protection voltage	2.7±0.05V
Short-circuit protection	Short circuit detection 500A delay 100ms
Discharge protection and recovery mode	Recovery threshold auto-recovery (charging current detected by charging activation (> 1A))



### 3.2 Indicator and Ports



Item	Designation	Definition
1	Switch	Air switch
2	Indicator light	Displays power level and indicator light (red for alarm)
3	Port	PCS-RJ45 communication connector
4	Port	Slave RJ45 output
5	Port	Slave RJ45 input
6	Output negative	Connect PCS negative
7	Input positive	Connect PCS positive
8	Pushbutton	Low pressure switch pushbutton

1 Check for abnormalities and other conditions before battery connection.

2 Connect the PCS-RJ45 port, if there is a slave, in accordance with the RJ45 communication port input and output port to connect the next slave can be.

3 Battery output positive and negative connected to the PCS positive and negative (if there are slaves in accordance with the positive and negative poles connected in parallel to the PCS positive and negative poles, the battery can not be connected in series)

4 Open the air switch, close the gate, and check whether there is any abnormality.

5 Press the power-on button, the light board will flash sequentially (internal BMS is completing the self-test), after the battery completes the self-test and there is no abnormality, the green indicator will flash once in 2-3 s (in the state of no charging and discharging), in charging or discharging, the power indicator (0%-100%) will work flashing.

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### 3.3 LCD display and key operation instructions

#### 3.3.1 LCD display description

The display has four buttons, namely ENTER, UP, DOWN and EXIT, through the operation of which you can view the BMS real-time sampling data, parameter information, fault protection status and other BMS information.



#### 3.3.2 Description of key operation

ENTER button is the menu index button, when the display is in standby mode, press ENTER button continuously to switch to the display page of fault protection status information, parameter information display page, battery information display page and current page display respectively, under this page, through the operation of UP button or DOWN button, you can turn the page to view all the BMS various sampling information, parameter information and fault status information;



Figure 1: Status page



Figure 2: Parameters page



Figure 3: Battery information page

### UP and DOWN buttons

UP and DOWN buttons are up and down page buttons, through the operation of the buttons can be up and down page to view the BMS real-time sampling data information, a variety of protection parameter information, alarms and fault status and a series of information; in the current page display press the UP button or DOWN button can be flipped to view the data information of the BMS, every time you press the button, the content of the display to the front or back flipped one page until the last page display and then start from the first page that is to turn the page, and so on;

### Exit button

The Exit button is the return current page display button, no matter which page the display is in, when the Exit button is pressed it will return to the current display page;



Figure 4: Current page

### Notes:

- The display will turn off the backlight automatically after 10 seconds of no operation;
- After the display is turned off, press any key to light up the backlight and illuminate the display;
- After the display is switched off, pressing any key to light up the display will only do the lighting action but not the page turning operation, that is to say, the first time after the display is switched off, pressing any key will light up the backlight and light up the display. That is to say, when the display is lit for the first time after the display is turned off, the display directly shows the page before it is turned off;
- The key can only be used to turn the page when the display is lit;

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## 4 Battery operating conditions

### 4.1 Ambient temperature of use

Discharge: -20 ~50

Charging: 0 ~50

Storage temperature: -20-45 ( one month) 0-35 ( one year) SOC: 50%

### 4.2 storage

Batteries should be stored as much as possible in an indoor environment with a relative humidity of 90%, (dry, ventilated and clean environment, avoiding contact with corrosive substances, principle sources of ignition and heat, and with the batteries in a state of 50%-70%, and in order to prevent over-discharging, charging 1H (0.2C) is carried out every other month).

## 5 Common Failure Determination

Fault condition	Method settle an issue
<b>Battery pack cannot be charged or discharged</b>	1、 Check that the wiring is connected correctly
	2、 Check for normal battery pack voltage
	3、 Check for loose battery connections
	4、 Disconnecting the load before switching on
	5、 Reboot after shutdown
<b>Battery heats up during use</b>	1、 Excessive continuous operating current (charging and discharging 1C)
	2、 Loose battery plug connection
	3、 Check the display to see if the battery is nearly discharged, and check the temperature points for abnormalities

## 6 Battery Care and Maintenance

- Batteries should be fully charged before first use, after 3-5 cycles, the battery capacity can be maximised.
- When the battery capacity is insufficient, it should be charged in time, which is beneficial to the battery life. If the battery is not charged in time, the battery life will be affected if the battery is in a state of power loss for a long period of time. If the battery is to be left for a long period of time, it is best to keep the battery at SOC: 50-70 per cent. If the battery is to be left for a long period of time, it is better to keep the battery at SOC: 50%-70% and to charge it every 2 months for a period of 1H (according to the specified charging power of 0.2C).
- Batteries should be in an air-circulated, dry environment, avoiding close to sources of ignition and flammable and explosive substances. Disconnect the load and air switch when not in use. Disconnect the load and air switch.
- Organic solvents should not be used to clean the battery case, and carbon dioxide fire extinguishers should not be used in the event of an accidental fire. Use carbon tetrachloride fire extinguisher or sand.
- Battery is a consumable product, please replace the battery in time when the battery capacity is less than 60-70% of the rated capacity.