



Installation & Operation Manual

Energy Storage System (ESS)

Storion-SMILE-B3



V08

Imprint

Germany

Alpha ESS Europe GmbH

Tel.: +49 (0) 6103 459 160-1

E-mail: europa@alpha-ess.de

Website: www.alpha-ess.de

Add.: Paul-Ehrlich-Straße 1a

63225 Langen

China

Alpha ESS Co., Ltd.

Tel.: +86 (0) 513 806 868 91

E-mail: info@alpha-ess.com

Website: www.alpha-ess.com

Add.: Jiu Hua Road 888, High-Tech Industrial Development Zone, Nantong City, 226300, Jiangsu Province

Australia

Alpha ESS Australia Pty. Ltd.

Tel.: +61 1300 968 933

E-mail: australia@alpha-ess.com

Website: www.alpha-ess.com.au

Add.: Suite 1, Level 1, 530 Botany Road, Alexandria, NSW

Italy

Alpha ESS Italy S.r.l.

Tel.: +39 (0)599 239 50

E-mail: info@alpha-ess.it

Web: <https://it.alpha-ess.com/>

Add: Via Loda, 17-41013 Castelfranco Emilia (MO)

July 29th, 2019

Copyright Declaration

The copyright of this manual is owned by Alpha ESS Co., Ltd. (hereinafter referred to as "AlphaESS") and all rights are reserved. Please keep the manual properly and operate strictly according to all safety and operation instructions in this manual. Do not operate the system before reading the manual.

Version Information

Version	Date	Contents
V01	Nov. 30 th , 2018	Newly compiled manual.
V02	Dec. 5 th , 2018	Modified the connection diagram of meters. Added the notice of external connection of backup and grid neutral line in Australia.
V03	Jan. 9 th , 2019	Modified side screen print and internal component layout.
V04	May 5 th 2019	Added instruction of installation location for AU Added battery expansion installation Added CT and meter mixed installation sequence Modified some details
V05	June 13 th , 2019	Modified as a result of structure change Added WIFI (Yilian) LED display Added server setting steps
V07	Aug. 8 th , 2019	Modified WIFI configuration

Contents

Imprint	I
Copyright Declaration	II
Version Information	II
Contents	III
1. Introduction	5
1.1 Introduction of System	5
1.2 General Precautions.....	6
2. Installation	8
2.1 Parts List	8
2.2 System Appearance	9
2.3 Limitation of Liability	12
2.4 System Installation.....	13
2.4.1 Installation Site and Environment.....	13
2.4.2 Installation Tools.....	14
2.4.3 SMILE-B3 Installation.....	15
2.4.4 Battery Expansion	20
2.4.5 Electricity Meter Wiring.....	28
3. Operation	35
3.1 Switch on.....	35
3.2 Switch off.....	35
3.3 Emergency Procedure	35
3.3.1 Emergency Handling Plan.....	35
3.3.2 Hazards	36
3.3.3 Fire.....	36
4. WiFi Module Configuration	37
5. System Registration.....	40
5.1 System Setup in Monitoring.....	41
5.1.1 Basic Information.....	41
5.1.2 Meter Information	41
5.1.3 Inverter Information	42
5.1.4 Other Information	43
6. On-line Monitoring	44
6.1 Account Registration	44

1. Introduction

1.1 Introduction of System

SMILE-B3 is an AC coupled all-in-one battery energy storage system (BESS). It can help to achieve the optimal usage of renewable energy. SMILE-B3 can control the bi-directional flow of electric power, work under auto/manual & time-of-use (TOU) modes, charge/discharge the battery as per customer's setting. Under the auto mode, SMILE-B3 will store surplus renewable energy onto the battery and discharge battery to supply power to local loads when renewable energy is not enough. SMILE-B3 is equipped with 3 buttons, friendly human machine interaction system. More importantly SMILE-B3 is stable, safe, and reliable. The standard schematic is as shown in Figure 1.1:

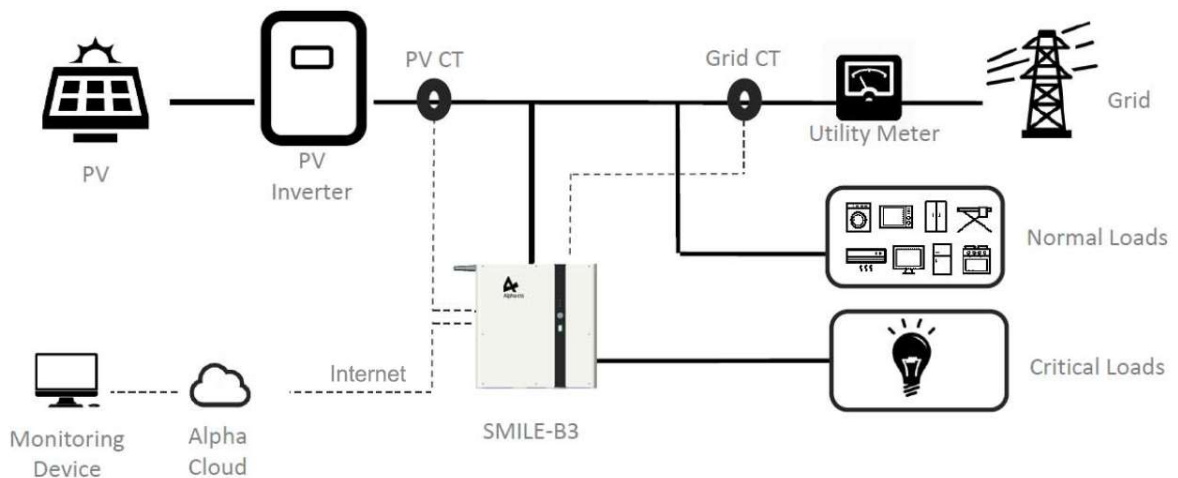


Figure 1.1 Storion-SMILE-B3 System with PV

NOTE: For the AC coupled system with PV, if only installing Grid CT, the system cannot display PV Inverter generated power, electric energy production etc.

If there is no PV, the schematic is as below:

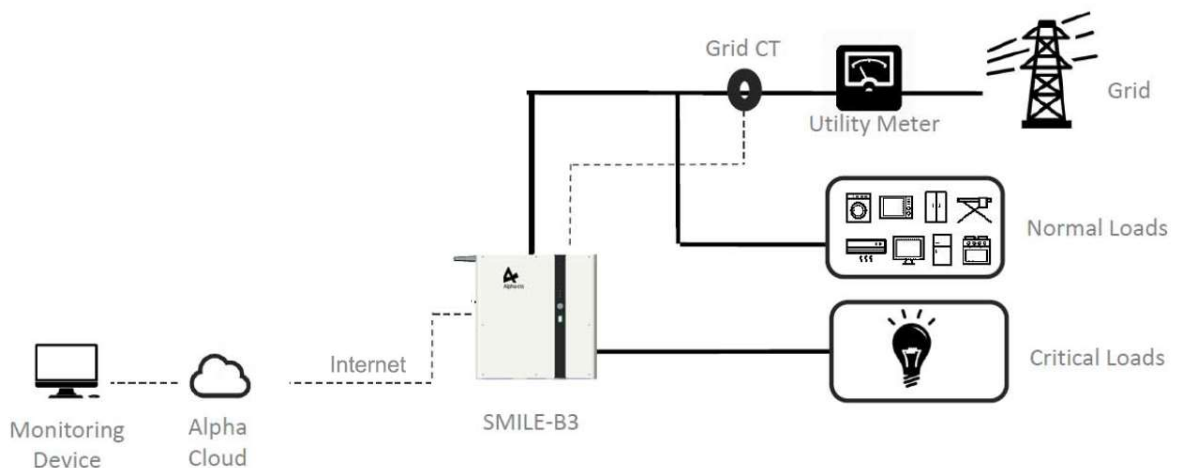


Figure 1.2 Storion-SMILE-B3 System without PV

1.2 General Precautions



Danger:

Danger to life due to high voltages of battery and electric shock.

- Do not touch uninsulated cable termination.
- Do not touch the DC wires.
- Do not open the inverter and battery.
- Do not use wet cloth to wipe the system.
- Do not dispose of batteries in fire. The batteries may explode!
- Only qualified personnel who are equipped with the corresponding skills can install and debug the system. Before performing any work on the inverter or battery pack, please disconnect the inverter from all voltage sources as described in this document.



Warning

Risks of chemical burn electrolyte or toxic gases.

During standard operation, electrolyte won't leak from the battery pack as well as form of toxic gases. Even if the battery was handled with care, but if the battery pack is damaged or breaks down, electrolyte may leak or form toxic gases.

- Do not install the system in temperature or humidity exceeding the permitted range.
- Please do not use wet hands to touch the system.
- Do not place heavy objects on the top of the system.
- Do not damage the system using sharp objects.
- Do not install or operate the system in the inflammable and explosive environment or high humidity environment.
- Do not install explosive gas and the battery pack in the area that containing highly flammable substance or gas.
- If the moisture penetrates the system (e.g. due to casing damage), please do not install or operate the system.
- When the system has connected the extended battery module, please do not move the system.
- Use strapping if necessary during transportation to prevent tipping.
- Storion-SMILE-B3 transport must be conducted by the manufacturer or professionals, these operations should be recorded and used.
- Certified ABC extinguishers with minimum capacity 2 kg must be carried during transportation.
- No smoking during unloading of vehicles and close to them.
- If you want to replace the battery module, please pack new dangerous packaging according to needs, pack them and let the supplier receive them.
- If contacting with the electrolyte, please wash affected area with water immediately, and consult a doctor immediately.

**Risk of injury by hoisting or falling system**

Inverters and batteries are heavy and can cause personal injury if the inverter or battery is improperly lifted or dropped during transport or when attached or removed from walls.

Lifting and transporting Storion-SMILE-B3 is conducted by more than 1 person.

2. Installation

2.1 Parts List

Check the following parts list for completeness.

AlphaESS provides a complete set of system for on-site customers, including:

Table 1 Parts List of B3



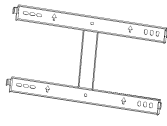

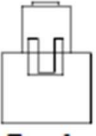


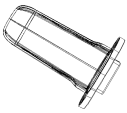



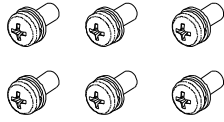
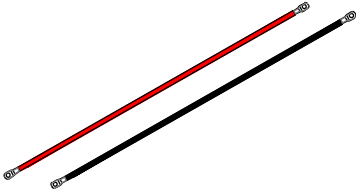
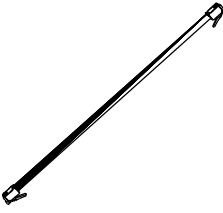
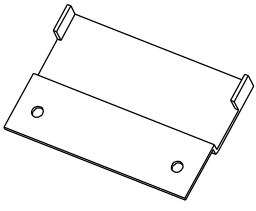
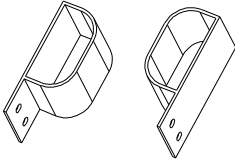
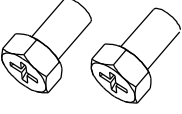
Storion-SMILE-B3			
			
1 x M4*12 screw	4 x Expansion screw	1 x Installing support	8 x White plug
			
2 x CT (100A, 3000:1) (1 x CT for DE version)	1 x Battery user manual	1x Installation manual	1 x WiFi module (optional / Standard for AU version)
			
2x Gum-elastic ring	2x M25 Pipe joint (AU version)	1x 5m Net cable (AU version)	

Table 2 Parts List of Battery Expansion Accessory Package

Storion-SMILE-B3 Battery Expansion Accessories (Optional, Standard for DE Version)		
		
6 x Screw M5*10	1 x Positive power line 2 x Negative power line	1 x Battery communication cable

		
1 x Installing positioner	2 x Stand holder	2 x M6*10

2.2 System Appearance

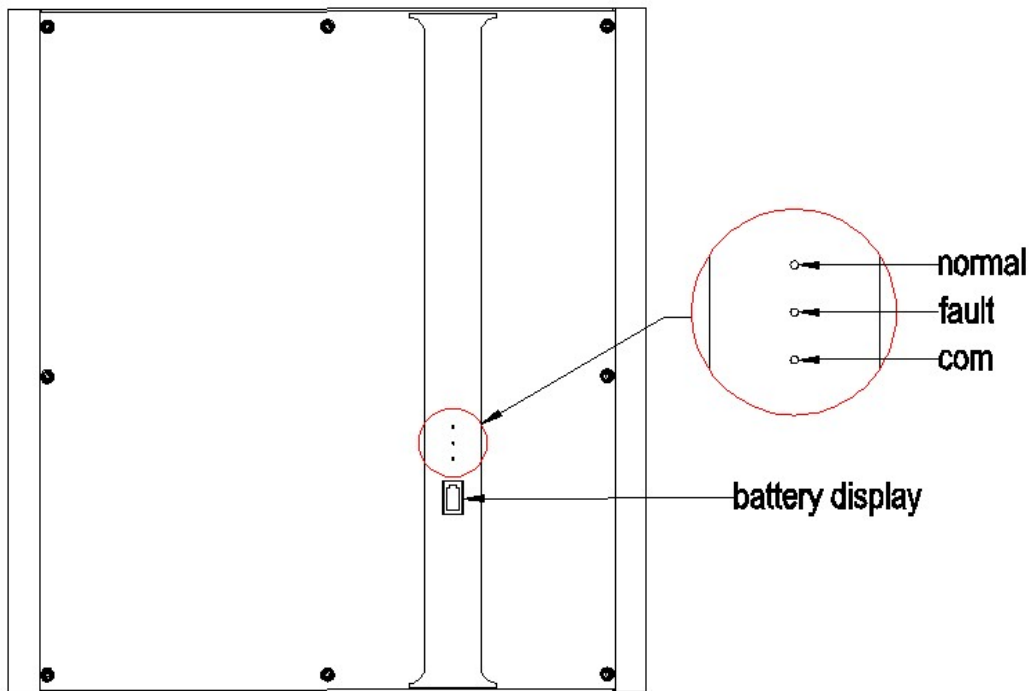







Figure 2.1 Storion-SMILE-B3 Exterior View

Table 3 SMILE-B3 System LED Display

LED	Status	Description
normal		Normally on: Normal system operation
		Single flicker: system standby or self-inspection
		off: out-of-order
fault		off: fault-free
		Normally on: out-of-order




com		Normally on: Normal network connection
		Flicker: connecting to the server
		off: un-connected network

Table 4 SMILE-B3 Battery LED Display














	SOC Status	Description
SOC Instruction		SOC<5%
		5%=<SOC<25%
		25%=<SOC<50%
		50%=<SOC<75%
		75%=<SOC<95%
		SOC>95%
LED Outer Ring Light Flicker Status		Standby: green light flickers for 1s Work: green light flickers for 10s

Table 5 SMILE-B3 WIFI (Yilian) Display

LED	Status	Description
Red		Normally on: normally communicate with EMS
		Off: not connected to EMS
Green		Flickers once in 30s : not connected to router
		Flickers 3 times in 30s: not connected to server
		Normally on: normal communication with server
		Normally on after flickering: sending or data to server

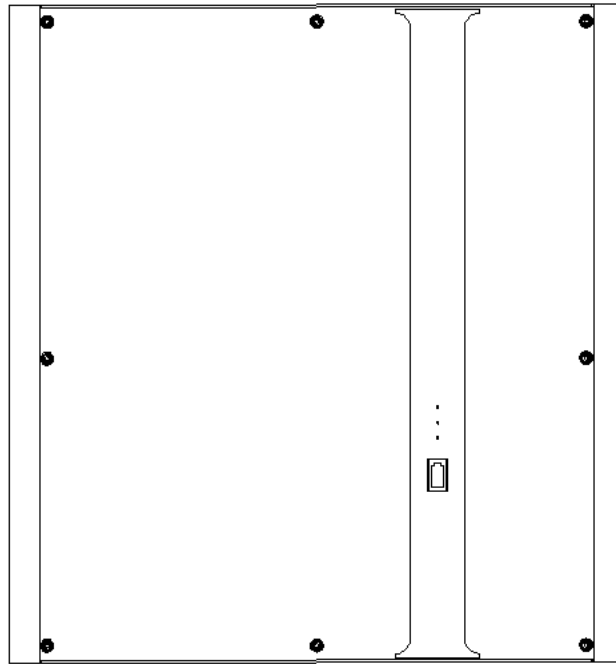


Figure 2.2 Storion-SMILE-B3 Front View

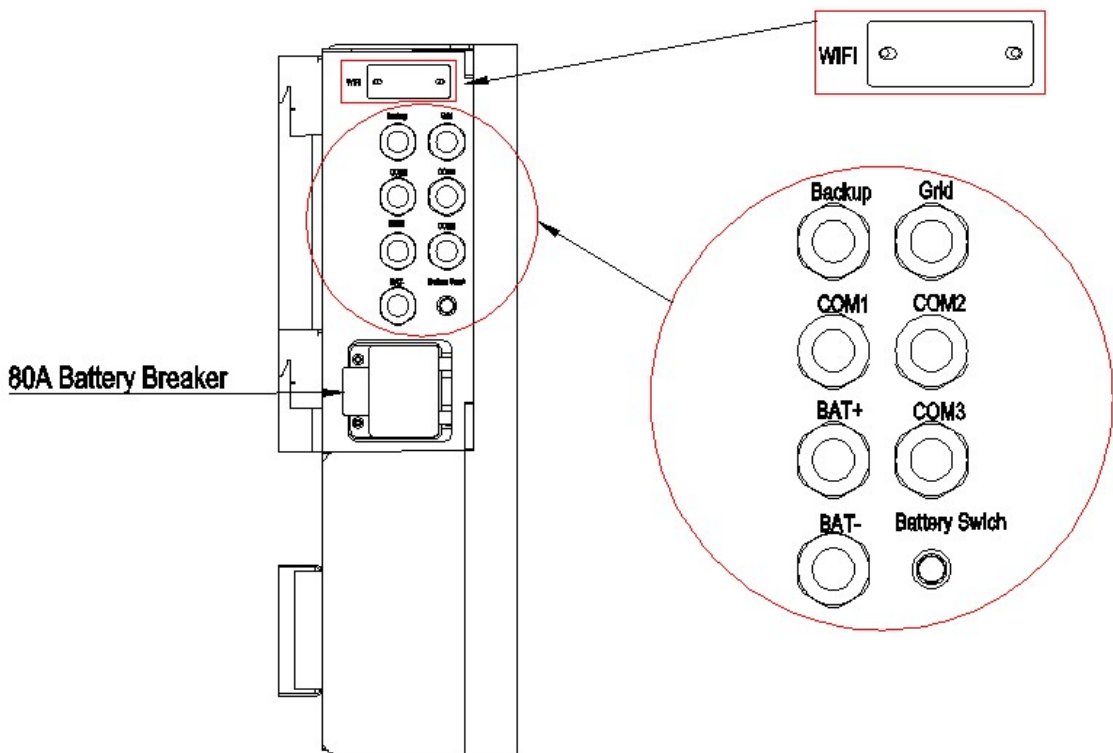


Figure 2.3 Storion-SMILE-B3 Left View

i Note: COM1/COM2/COM3 can be passed through by two net cables.

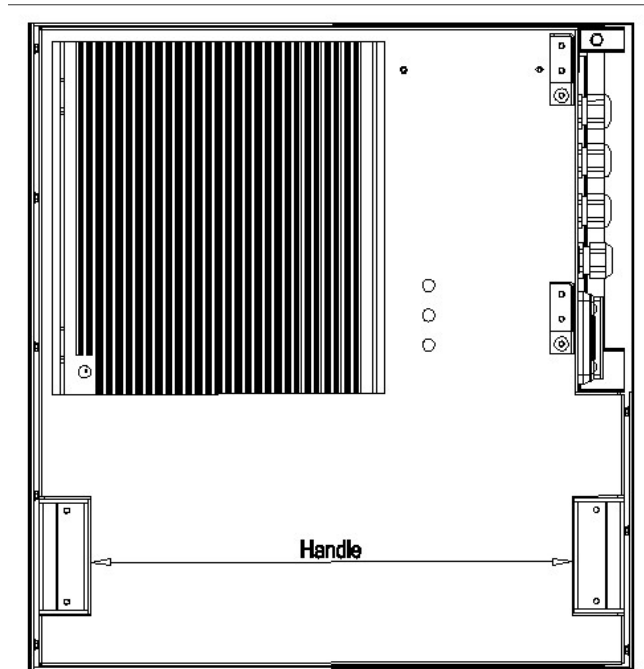


Figure 2.4 Storion-SMILE-B3 Rear View

2.3 Limitation of Liability

AlphaESS shall not be liable directly or indirectly for any product damage or property loss caused by any of the following conditions.

The product has been modified, the design modification or the change of parts without the authorization of AlphaESS;

Non-AlphaESS technicians change, repair and serial number removing;

System design and installation fail to meet the standards and other relevant requirements;

Fail to observe local safety regulations;

Transportation damage (including paint scratches caused by friction in packaging during transportation). Once the container/package is unloaded and the damage is confirmed, claims shall be put forward directly to the transport or insurance company;

Fail to comply with any/all user manuals, installation guide and maintenance rules;

Improperness or misuse of equipment;

Insufficient equipment ventilation;

Product maintenance procedures do not follow acceptable standards;

Force majeure (violent or stormy weather, thunder and lightning, overvoltage, fire, etc.);

Any damage caused by external factors

2.4 System Installation

This manual introduces the basic steps how to install and set up Storion-SMILE-B3.

Observe the specified minimum distance of adjacent objects;

Minimum distance guarantee;

Sufficient heat dissipation;

The upper cover of the energy storage system has enough space to open;

Sufficient room for maintenance.

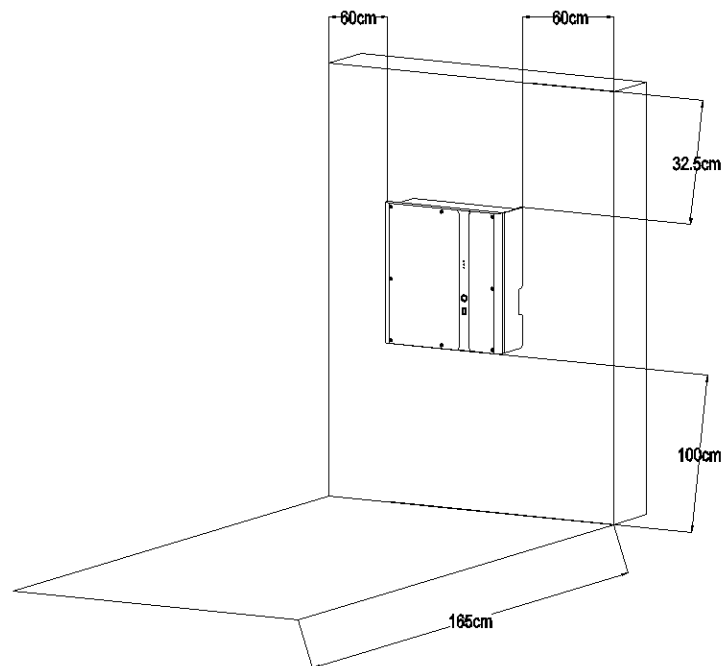


Figure 2.5 Limit the Distance to an Adjacent Object

2.4.1 Installation Site and Environment

The following sites are not allowed installation:

- a. wall cavities;
- b. on roofs not specifically deemed suitable;
- c. areas of access/egress;
- d. under stairways;
- e. under access walkways;
- f. sites where the freezing point is reached, like garages, carports or other places;
- g. sites with humidity and condensation above 85%.
- h. Places with plenty of salt.
- i. Flooded areas.
- j. Earthquake areas-additional security measures are needed here.
- k. Places with altitude higher than 2,000 meters.

- l. Place with explosive gases.
- m. Place with direct sunlight.
- n. Place with the ambient temperature extremely variable.
- o. Places with highly flammable materials or gases.
- p. Wet rooms
- q. Places with potentially explosive gases.
- r. Wall load bearing must exceed 180kg

i **Note:** Please neglect the rules from a to e if system will be installed at other country rather than AUS and NZL.

2.4.2 Installation Tools

The following tools are required to install the equipment.



Wire
Cutter



Cable clamp



Screw Driver
Set



T20 double offset ring
spanner



Percussion Drilling

i **NOTE:** Use properly insulated tools to prevent accidental electric shock or short circuits. If insulated tools are not available, cover the entire exposed metal surfaces of the available tools, except their tips, with electrical tape.

2.4.2.1 Safety Gear

It is recommended to wear the following safety gear when dealing with the battery pack



Insulated gloves



Safety goggles



Safety shoes

2.4.3 SMILE-B3 Installation

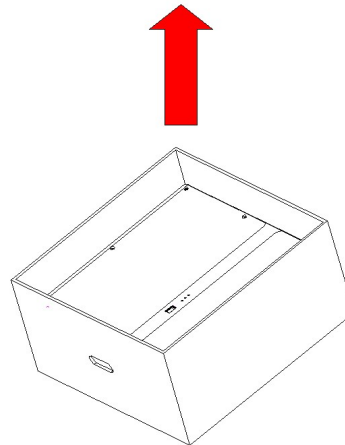


Figure 2.6 Remove Storion-SMILE-B3 Packaging

Step 1: Take out Storion- SMILE-B3 from the packaging box, as shown in Figure 2.6.

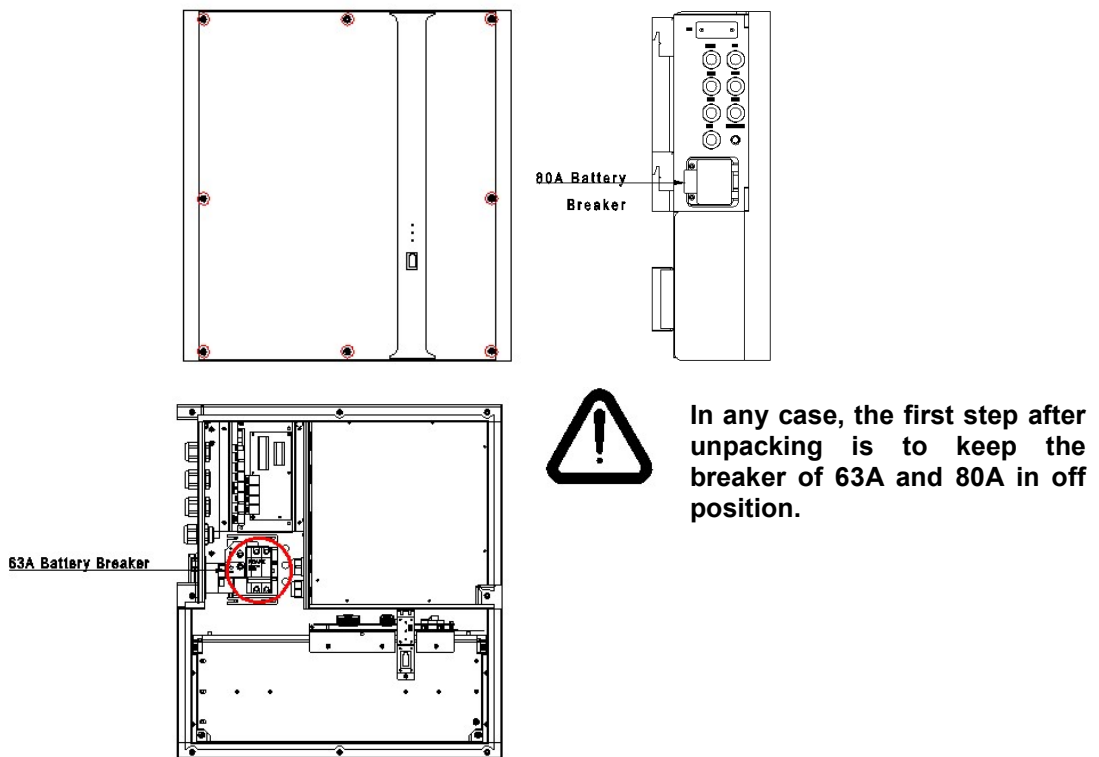


Figure 2.7 Remove Storion-SMILE-B3 Upper Cover Plate

Step 2: Use the T20 double offset ring spanner to unscrew the screws, as shown in Figure 2.7.

i Note: the internal 63A and the external 80A breaker must be in off position to prevent short circuit.

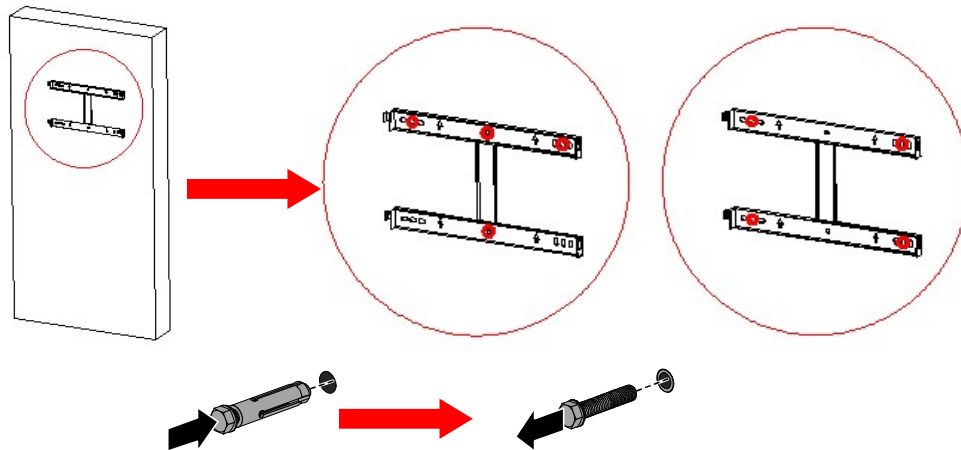


Figure 2.8 Stand Positioning

Step 3: use the percussion drill (M12 drill) to drill holes in the wall (there are two methods to position the holes), then install and place the stand. Firstly insert the expansion pipe into the drilled hole. Then pass the tapping screw through the spacer and tighten it with the cross screwdriver, as shown in Figure 2.8.

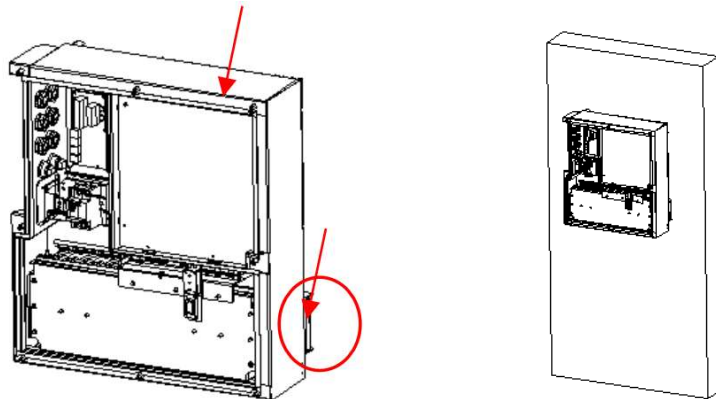


Figure 2.9 Casing Fixation

Step 4: install the casing of Storion-SMILE-B3 (hold the two arrow positions of B3 and install the B3 box to the stand), as shown in Figure 2.9.

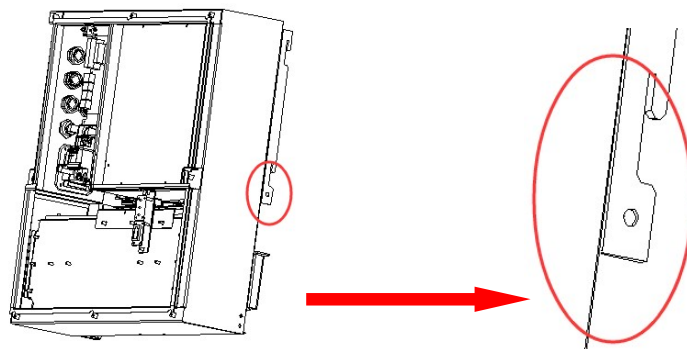


Figure 2.10 Earthing Connecting Position

Step 5: the earthing connecting position for Storion-SMILE-B3 is as shown in Figure 2.10, please use the M4 screw.

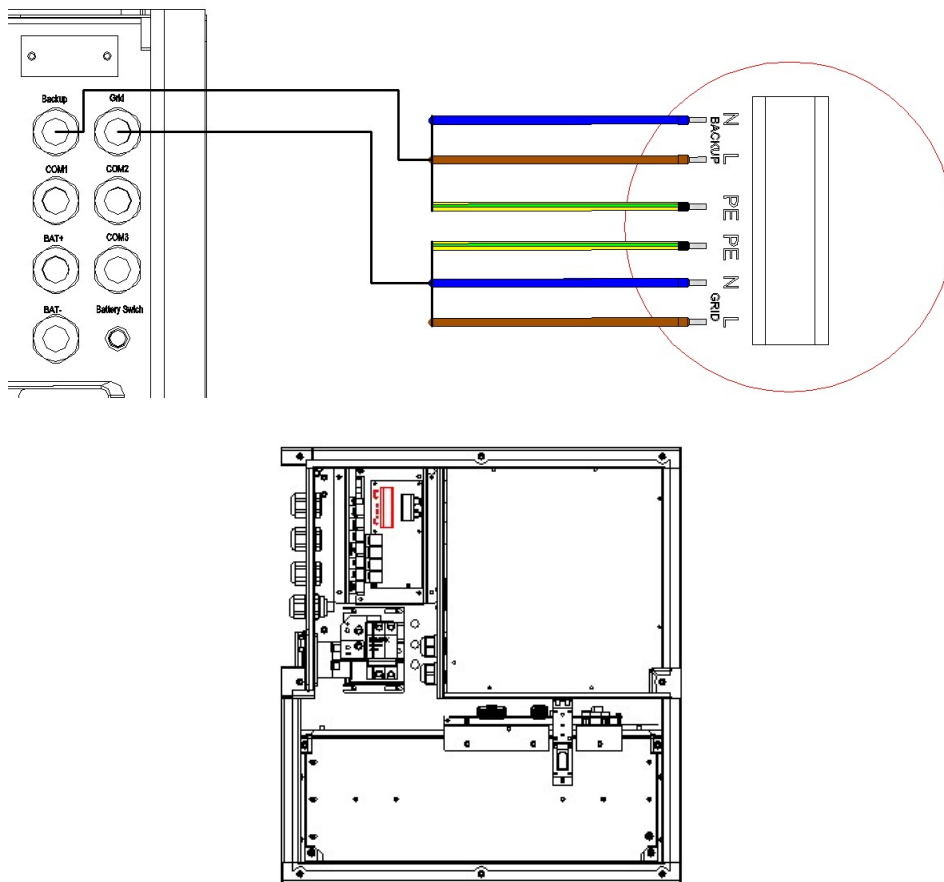


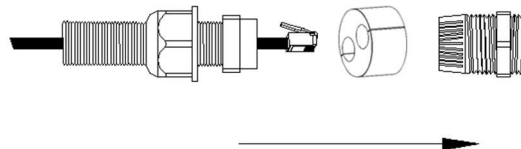
Figure 2.11 Backup and Grid Wire Harness Wiring

Step 6: Connect Backup and Grid wire harness as shown in Figure 2.11.

i Note: in Australia, the neutral of backup and grid circuit should be externally connected on the neutral bar.

i Note: in some places like AUS and NZL the corrugated pipes will be needed. Please remove the original gum-elastic rings and the connectors of Backup and Grid port waterproof contact and then replace them with the M25 pipe joints and the gum-elastic rings in parts list.

The suggested torque for the waterproof contact is $3.75 \text{ N.m} \pm 10\%$.



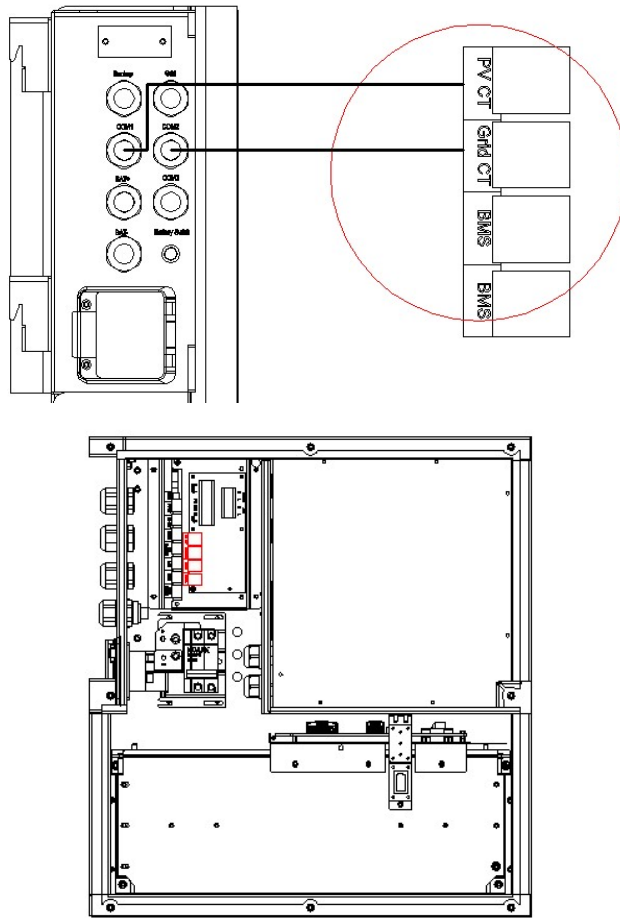


Figure 2.12 CT Wire Harness Wiring

Step 7: Complete for installing CT, as shown in Figure 2.12.



Note: CT communication wires can be connected directly through the gum-elastic ring of the M25 waterproof contact, no need to make the on-site network line.

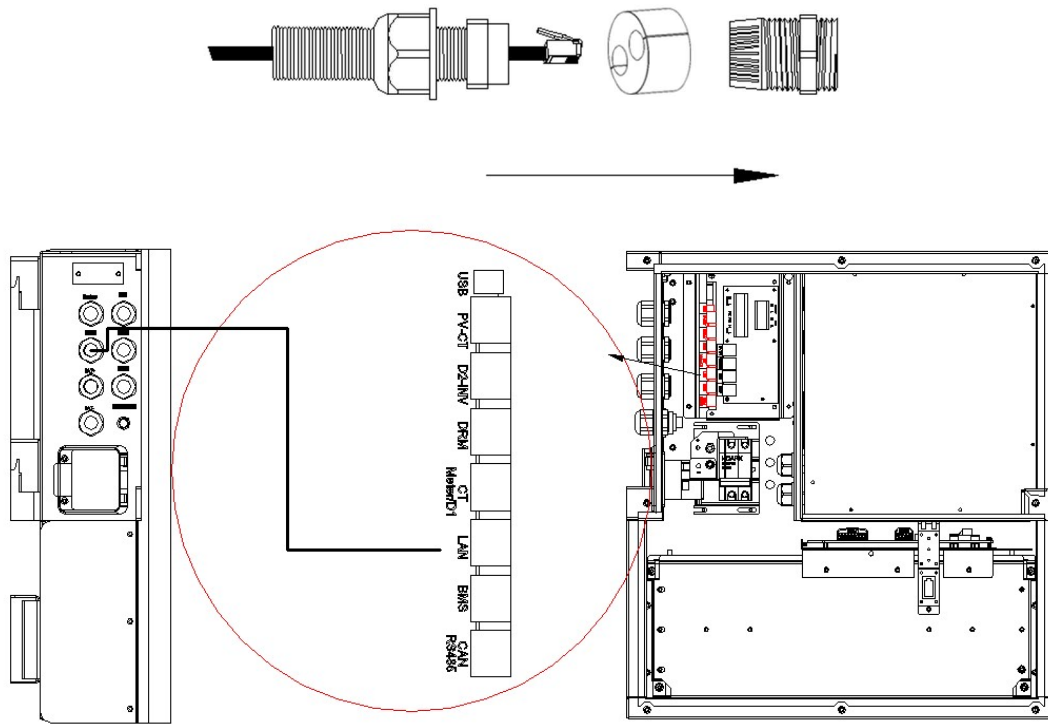


Figure 2.13 Ethernet Communication Cable Wiring

Step 8: Connect the ethernet communication cable, as shown in Figure 2.13. It won't be needed if using WiFi module.

i Note: The ethernet communication cable can be connected wiring directly through the gum-elastic ring of the M25 waterproof contact, no need to make the on-site network cable. The maximum outer diameter of the network cable does not exceed 14mm.

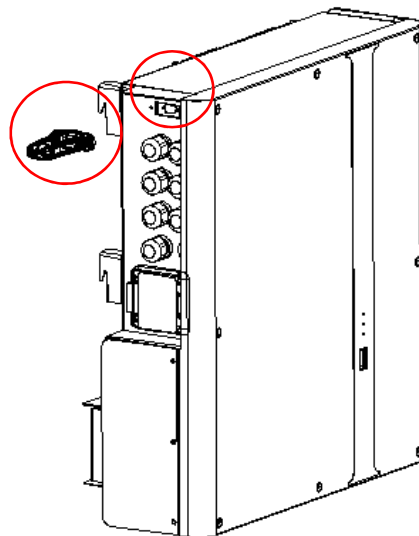


Figure 2.14 Install WiFi Module

i **Note:** If using WiFi module, open the cover plate of the side WiFi module, insert the WiFi module into the terminal port and then fix it with screws by using T20 double offset ring spanner, as shown in Figure 2.14. The suggested torque is $1.6 \text{ N.m} \pm 10\%$

If you will install external M4856-P for expansion, please go to section 2.4.4 directly.

Step 9: before re-covering the upper cover plate, please turn on the internal 63A switch.

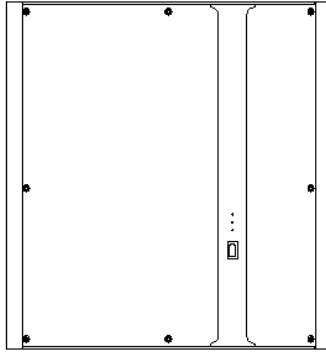


Figure 2.15 Re-cover the Upper Cover Plate

Step 10: the wiring is completed, please re-cover the B3 upper cover plate, use the T20 double offset ring spanner to tightly lock the upper cover screw. The suggested torque is $2.8 \text{ N.m} \pm 10\%$. Then install the white plug, as shown in Figure 2.15.

2.4.4 Battery Expansion

If you are not installing external M4856-P battery for expansion, please neglect this section.

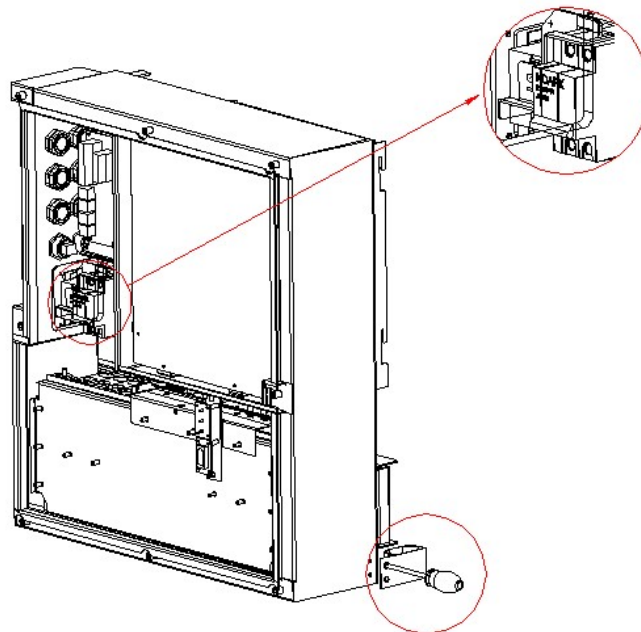


Figure 2.16 Installing stand holders

Step 1: Keep the 63A DC breaker off. Open the accessory package and install the two stand holders.

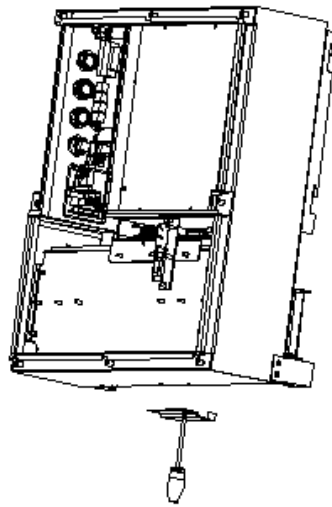


Figure 2.17 Installing positioner

Step 2: Install the position limiter on the bottom as shown in Figure 2.17.

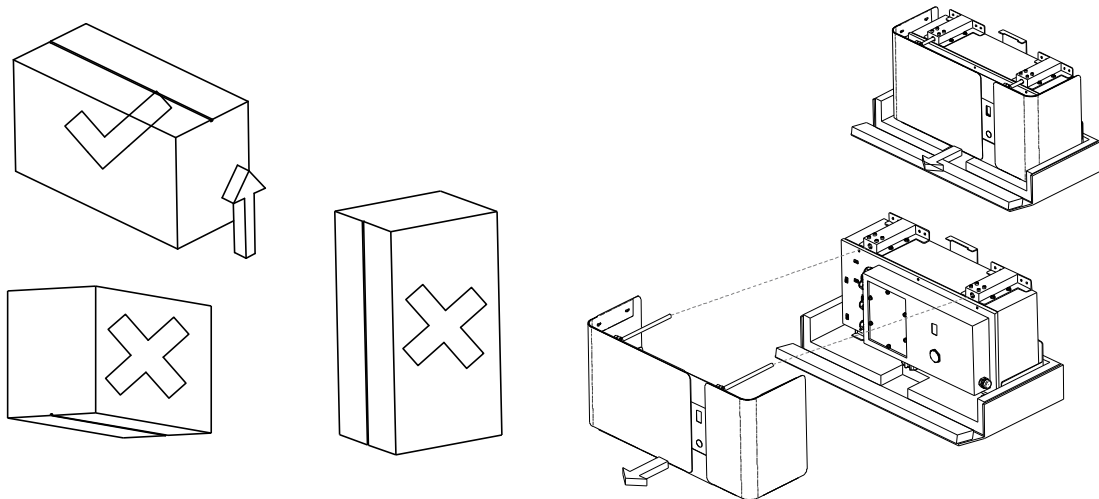


Figure 2.18 Taking out the battery

Step 3: Open the battery package. Pull off the buckle located in the middle of the bottom. Pull the top two guide rods to remove the front panel, as shown in Figure 2.18.

NOTE: The box must be placed in the direction of the label and only remove the packaging in upwards direction. Removing the packaging in other directions is wrong.

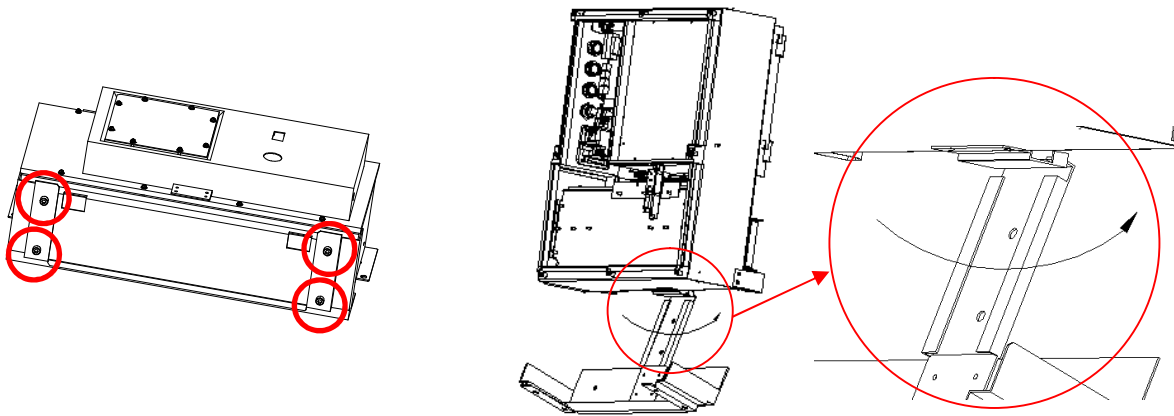


Figure 2.19 Installing battery bracket

Step 4: Unscrew the four screws on the bottom of M4856-P. Place the battery stand bracket near the position limiter.

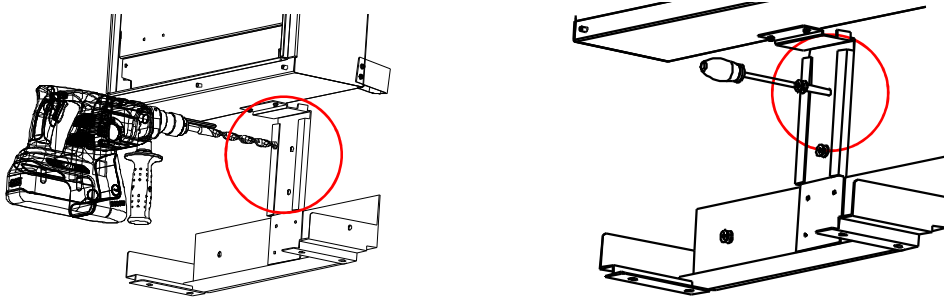


Figure 2.20 Placing battery bracket

Step5: Drill the holes of the battery holder. Insert the expansion pipe into the drilled hole. Then pass the tapping screw through the spacer and tighten it with the cross screwdriver.

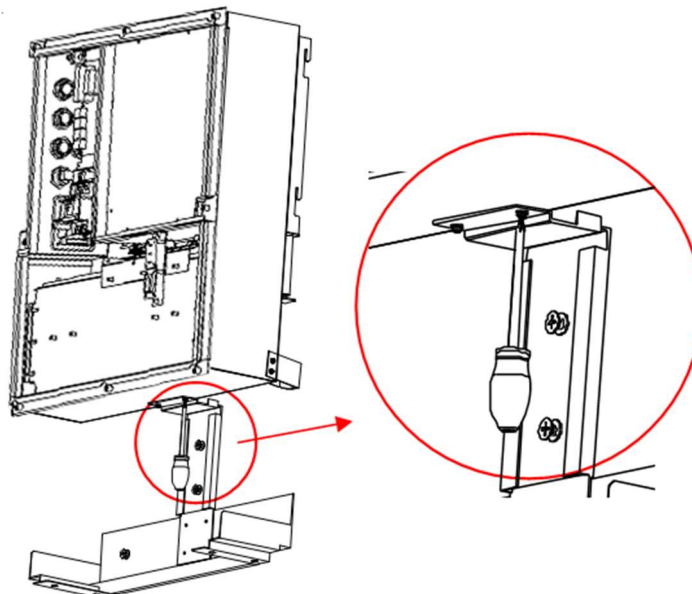


Figure 2.21 Removing the position limiter

Step 6: Remove the positioner

NOTE: If the positioner is not removed, SMILE-B3 can be not removed separately in the future.

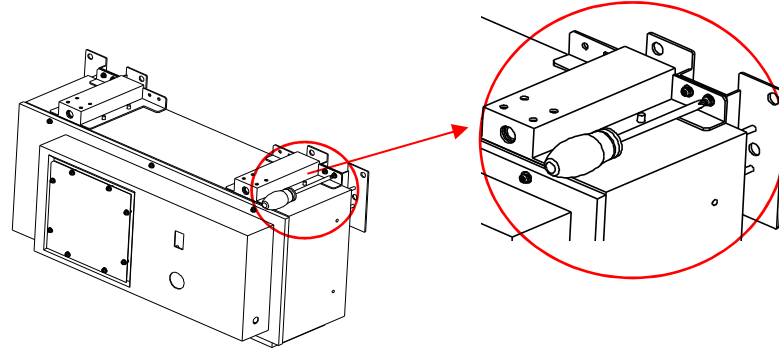


Figure 2.22 Installing the battery bracket

Step 7: Install the two battery brackets as the above directions.

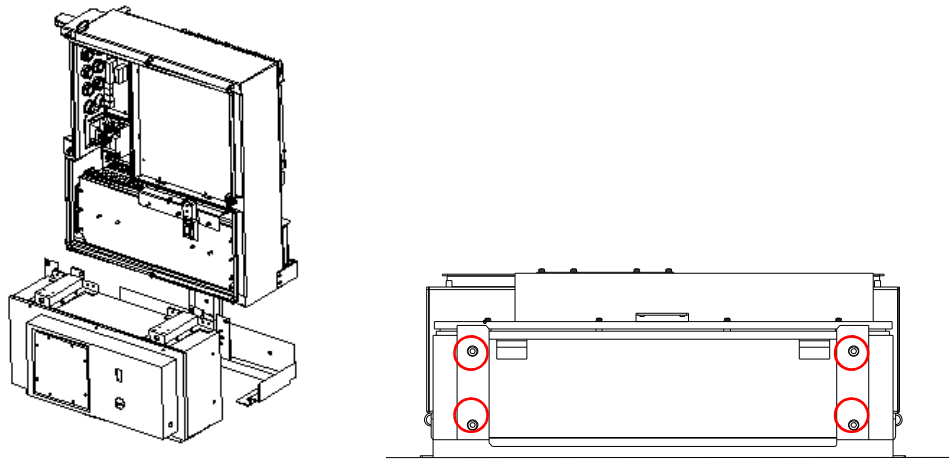


Figure 2.23 Fixing the battery stand bracket

Step 8: Place the battery into the battery stand bracket and fix it with four screws, which have been unscrewed in Step 4.

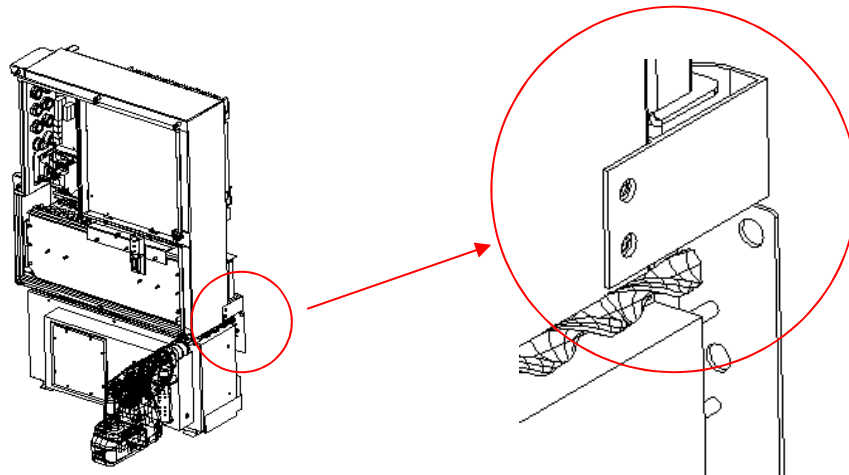


Figure 2.24 Fixing the battery

Step 9: Please drill holes directly on the wall at the marking positions of the brackets. Insert the expansion tube and pass the expansion screw through the gasket and lock with a screwdriver.

NOTE: If the drill is not long enough, you can mark the hole positions before drilling.

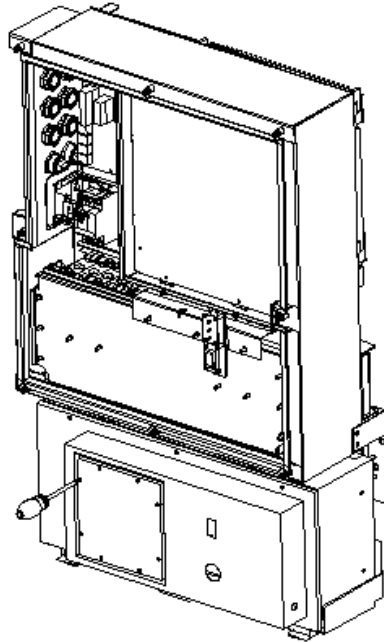


Figure 2.25 Removing the maintenance cover

Step 10: Remove the maintenance cover before wiring.

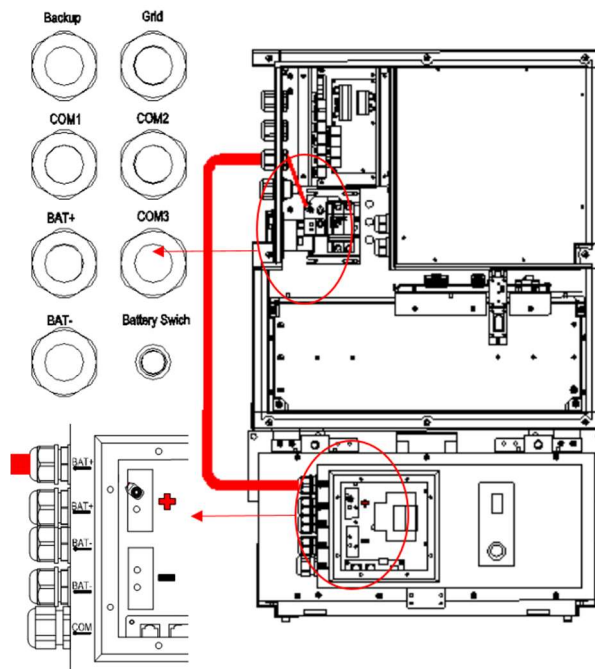


Figure 2.26 Wiring positive power cable

Step 11: Pass the red positive power cable through the two BAT+ waterproof rings. And fix it on the copper bars inside the battery and inverter.

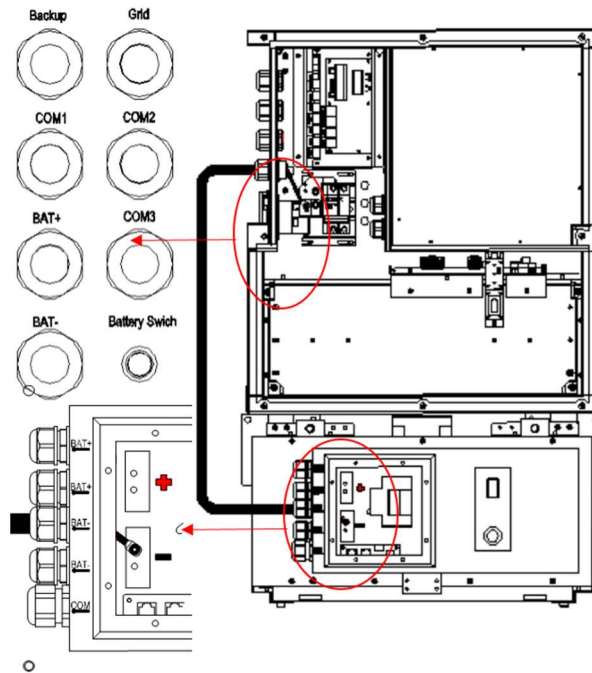


Figure 2.27 Wiring negative power cable

Step 12: pass the black negative power cable through the two BAT- waterproof rings. And fix it on the copper bars inside the battery and inverter.

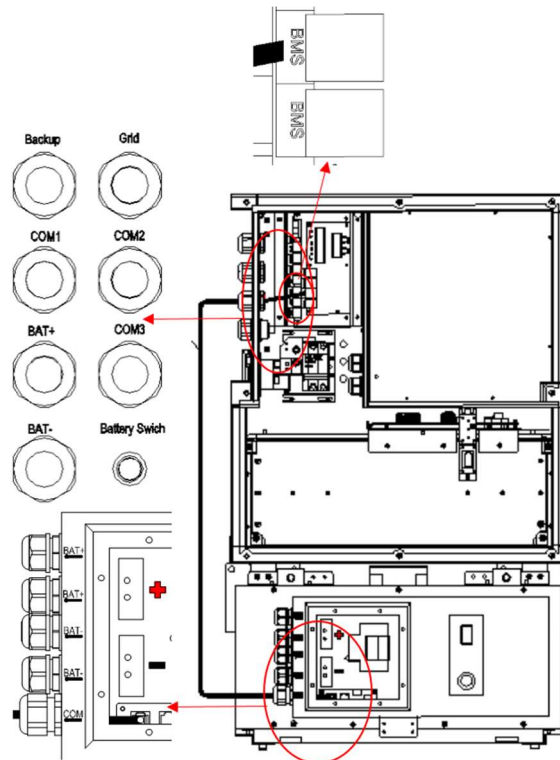


Figure 2.28 Communication cable wiring

Step 13: Pass the communication cable through the COM waterproof ring of BAT and BMS waterproof ring of INV. And insert it into the corresponding port (anyone of the two RJ45 ports).

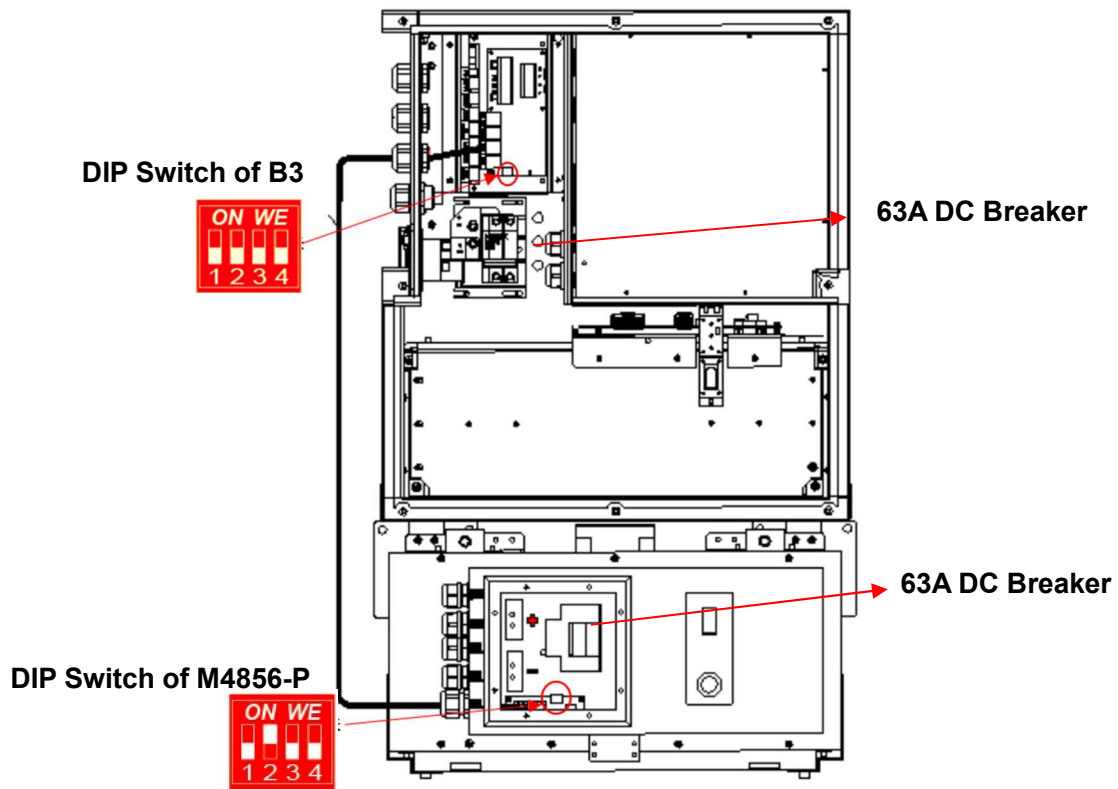


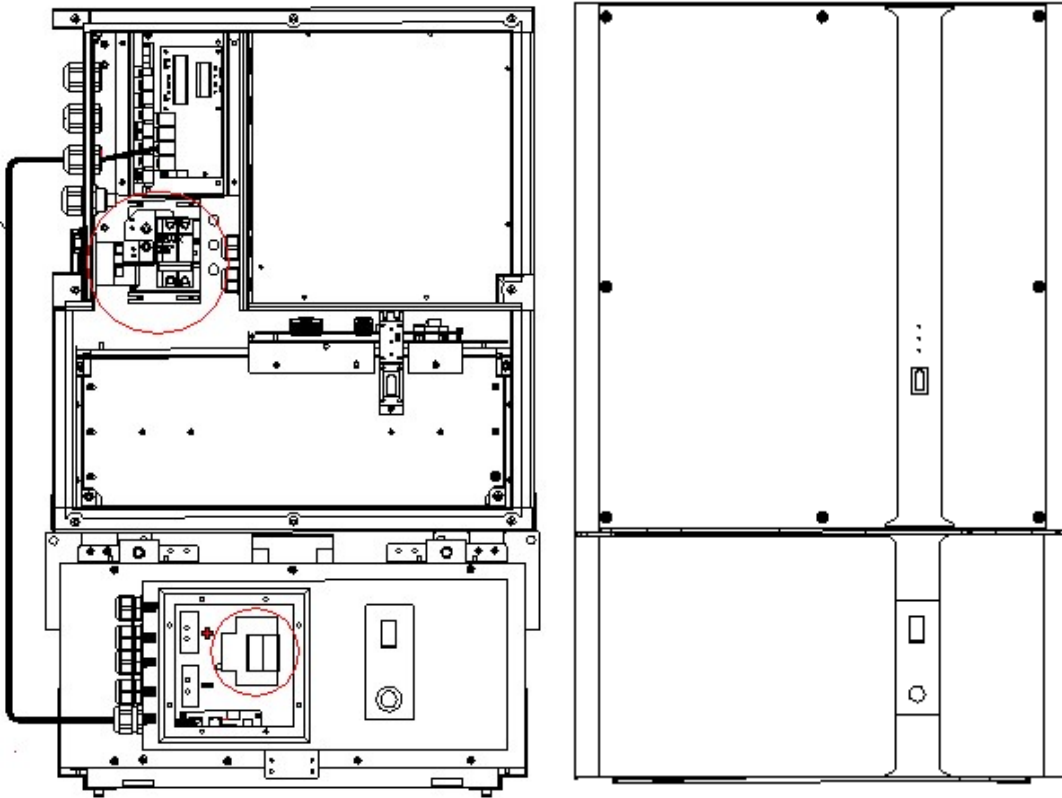
Figure 2.29 DIP switch configuration

Step 14: If there is only one M4856-P to be connected, switch off the DIP2 in SMILE-B3 and switch on the DIP2 in M4856-P.

If there are more than two batteries to be connected, please refer to DIP switch configuration table as below:

Battery Position.	DIP 1	DIP 2	DIP 3	DIP 4	DIP Switch
Non-bottom battery (incl. B3-bat)	OFF	OFF	OFF	OFF	
Bottom battery	OFF	ON	OFF	OFF	

Bottom battery is the battery farthest from the inverter.



Step 15: Switch on the 63A DC breaker of SMILE-B3 and M4856-P, fix the maintenance cover of the battery and recover the front panel.

Step 16: Switch on the 80A DC breaker. Then re-cover the B3 upper cover plate, use the T20 double offset ring spanner to tightly lock the upper cover screw and insert the 8 white plugs.

2.4.5 Electricity Meter Wiring

The power meter should be installed and connected in the distribution box. There are several types of power meters, available for CT, ADL-3000 or ACR10R.

CT: 100A, 1:3000

ADL-3000: Three-phase electricity meter (with or without CT)

ACR10R: Three-phase CT electricity meter (with CT)

Table 6 CT meter ratio and accuracy table

Model	CT ratio	Accuracy
ADL3000-N/CT & 300A/5A CT	60	0.6 kWh
ADL3000-N/CT & 400A/5A CT	80	0.8 kWh
ADL3000-N/CT & 400A/1A CT	400	4.0 kWh
ACR10R-100A CT	100	1.0 kWh
ACR10R-120A CT	120	1.2 kWh

2.4.5.1 CT

The CTs connection is as shown in Figure 2.30:

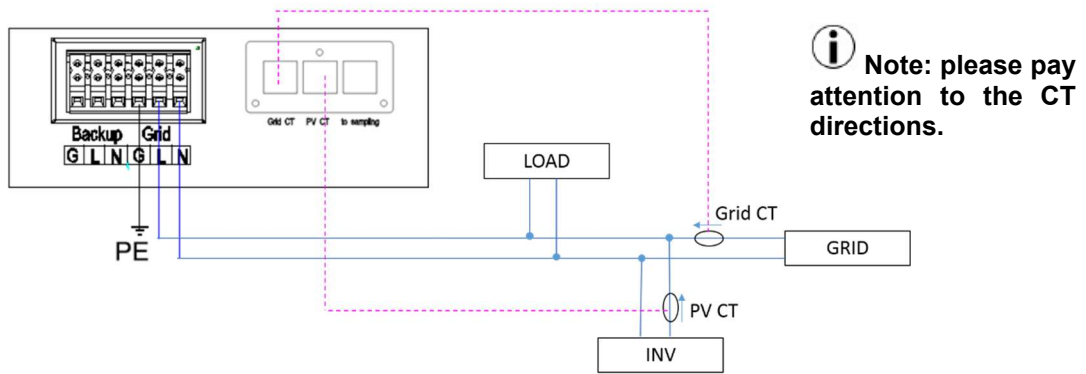


Figure 2.30 CT Connection

2.4.5.2 Electricity Meter ADL-3000 (if optional)

ADL-3000 connection (without CT, without Meterplug):

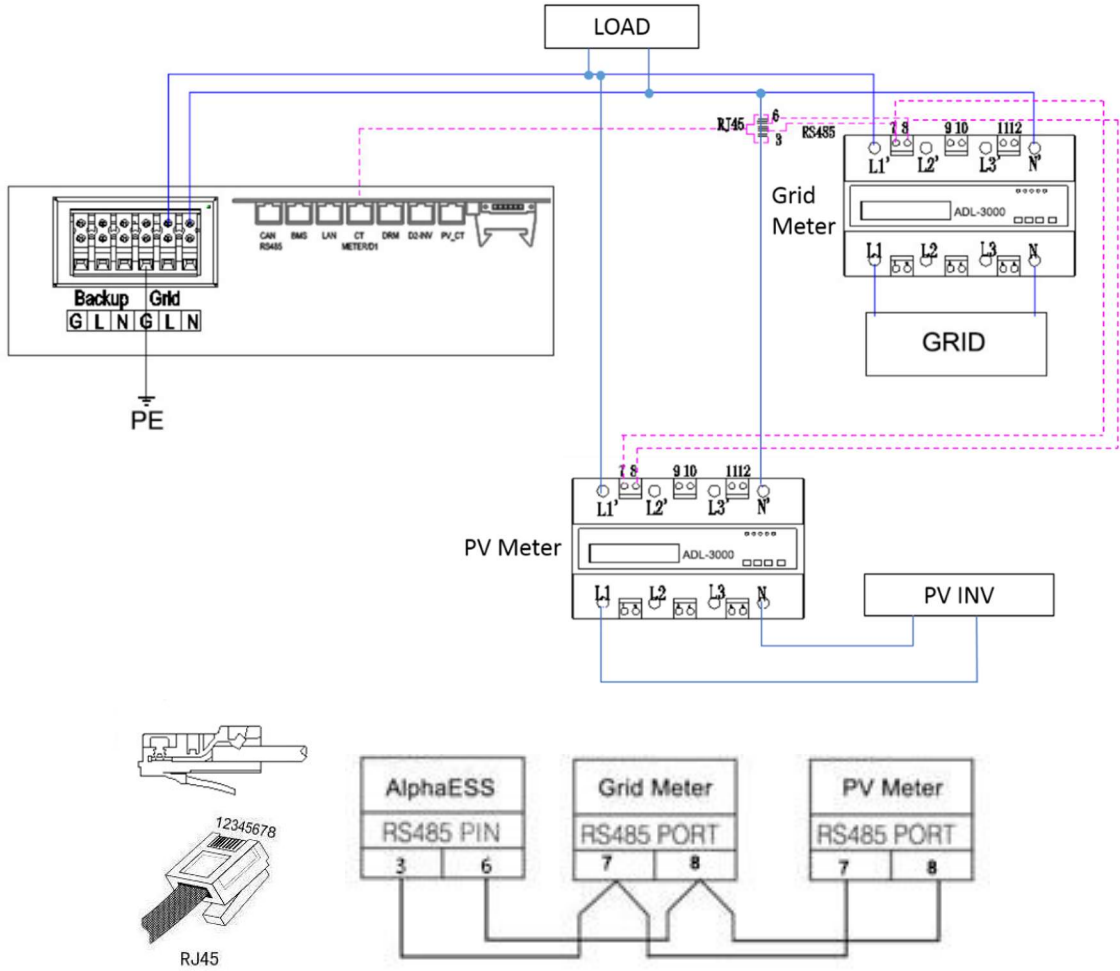


Figure 2.31 ADL-3000 connection (without CT, without meterplug)

i Note: terminal 7, 8 connecting RJ-45 PIN 3, 6.

ADL-3000 connection (without CT, with Meterplug)

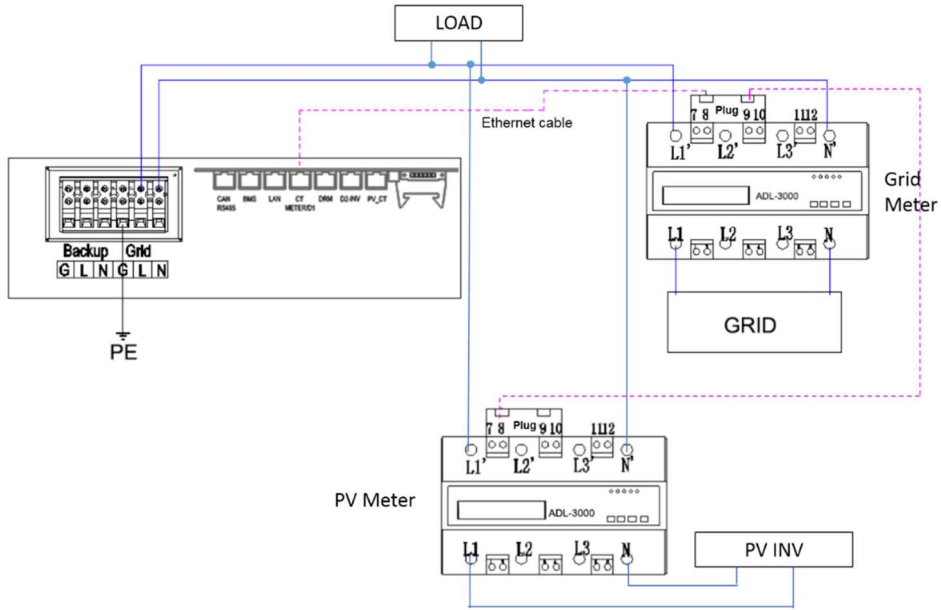


Figure 2.32 ADL-3000 connection (without CT, with meterplug)

ADL-3000 connection (with CT, without Meterplug)

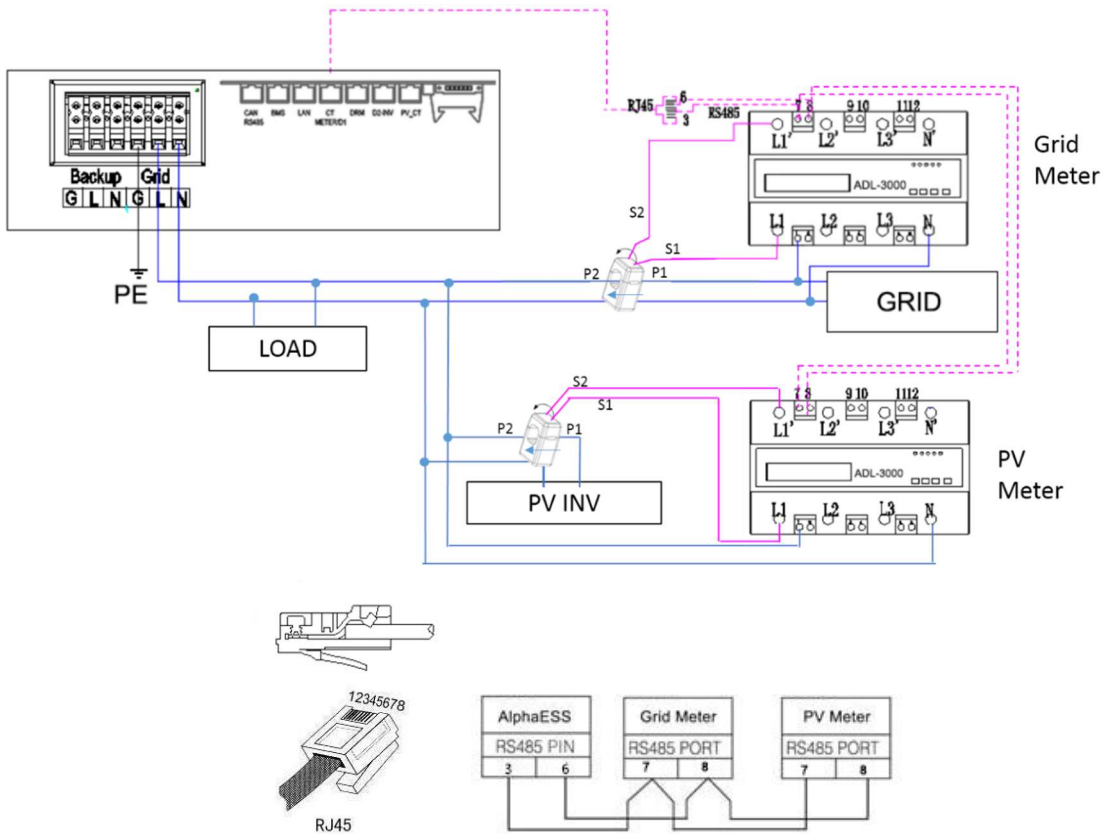


Figure 2.33 ADL-3000 Connection (with CT, without meterplug)

ADL-3000 Connection (with CT and Meterplug):

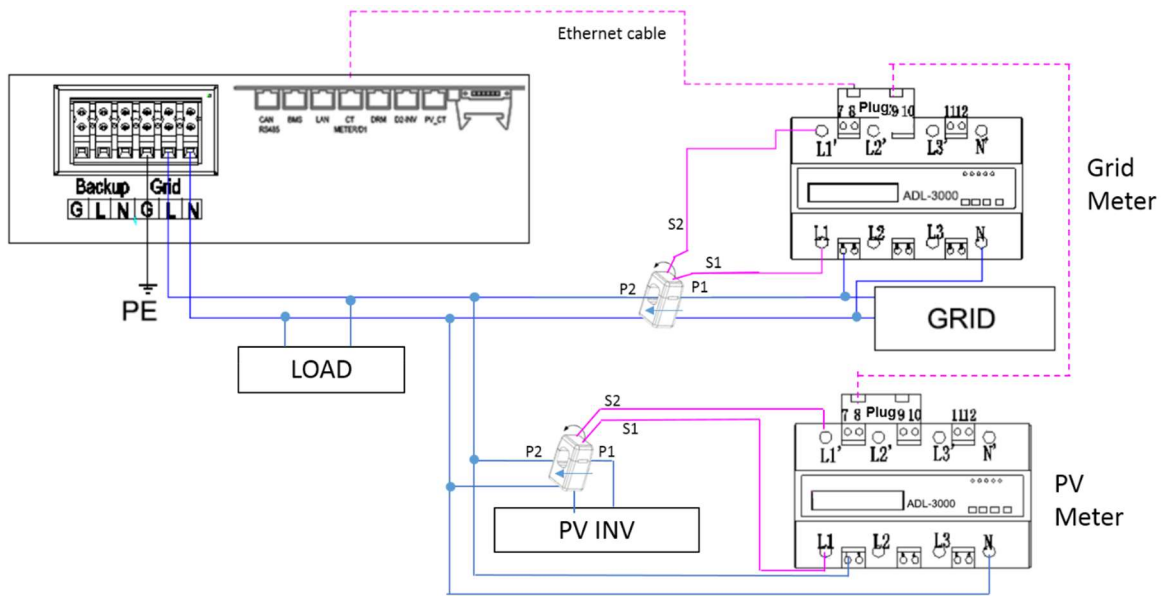


Figure 2.34 ADL-3000 Connection (with CT and meterplug)



Note: In AC system the both two meters' addresses should be set, please refer to 2.4.5.5.1.

2.4.5.3 Electricity meter ACR10R (if optional)

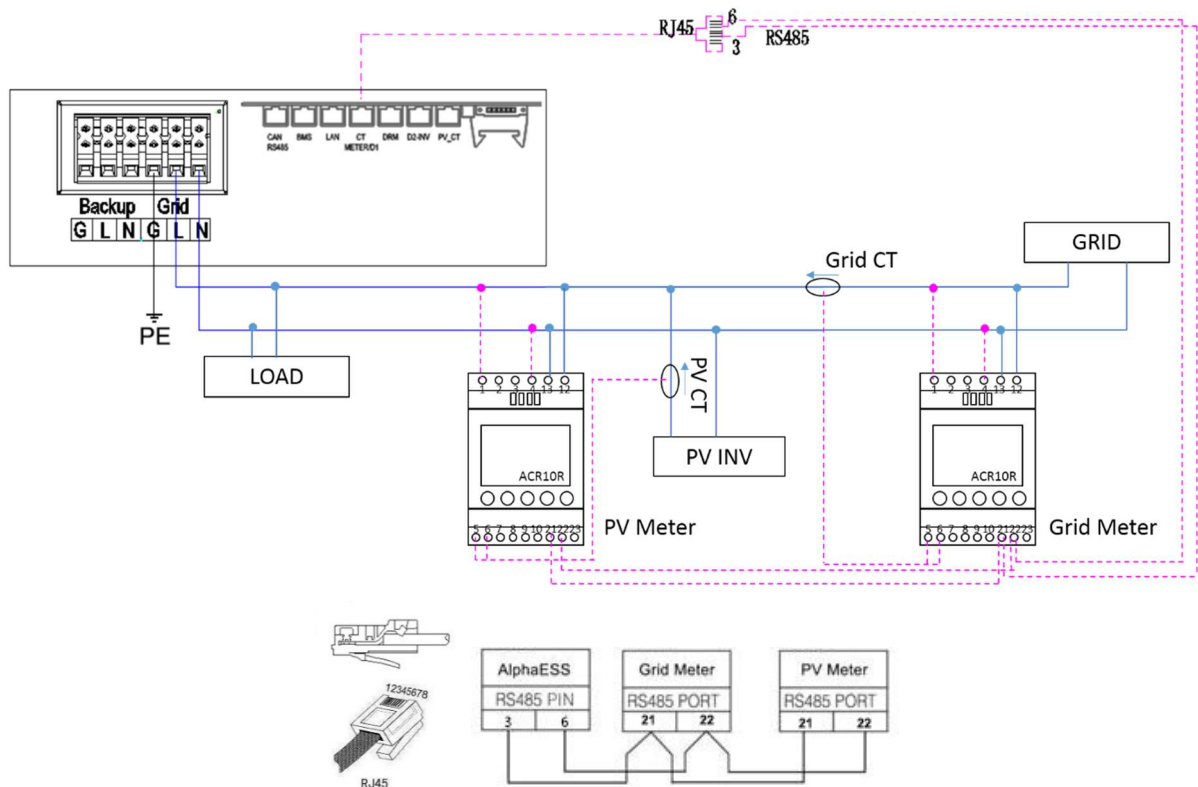


Figure 2.35 ACR10R Connection

i **Note:** please pay attention to the CTs direction.

In AC system the both two meter addresses should be set, please refer to 2.4.5.5.2.

2.4.5.4 Mixed Installtion of CT and Meter

A CT and a three-phase meter (ADL3000, ALD3000 with CT, ACR10R with CT) can be installed in the same system, the CT and the meter shall be installed according to the corresponding position, otherwise the system will run abnormally.

The initial setup is CT connection. If a meter is connected, after connecting, a relevant configuration work shall be carried out by **the installer** on AlphaCloud, please refer to 5.1.2.

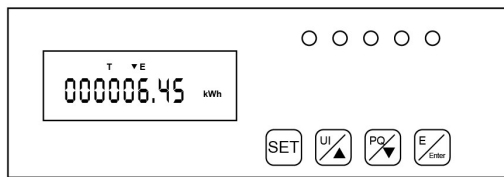
i **NOTE:** This function is released in SMILE-B3 EMS firmware version V1.00.33 or above.

In AC system and the mixed installation of CT and meter situation, the meter address should be also set in the meter, please refer to 2.4.5.5.1 (ADL3000) and 2.4.5.5.2 (ACR10R).

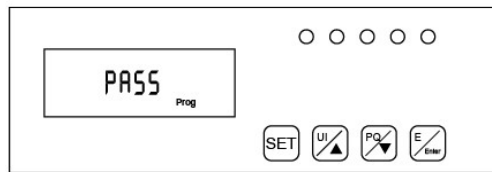
2.4.5.5 Meter setting

2.4.5.5.1 ADL3000

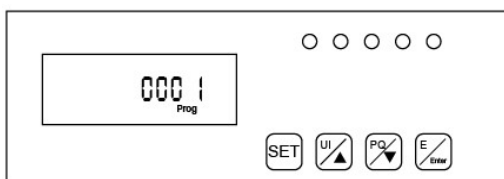
Step 1: The initial interface of the meter (normal working interface) is as shown below:



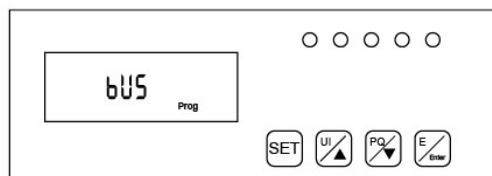
Step 2: Click the "SET" button to enter the password interface:



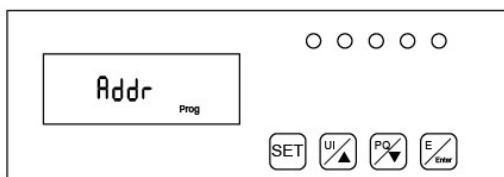
Step 3: Click the "Enter" button to enter the following interface, and press the up and down arrow keys to enter the password 0001;



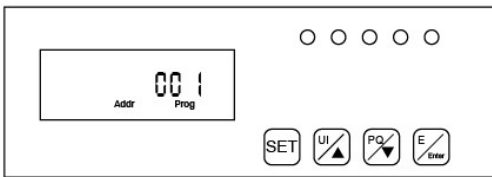
Step 4: Click the "Enter" button and the password input is completed.



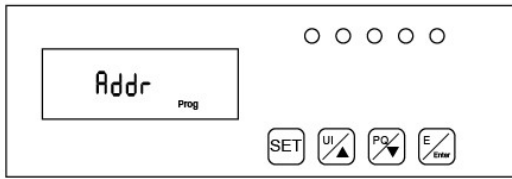
Step 5: Click the "Enter" button again to enter the address interface:



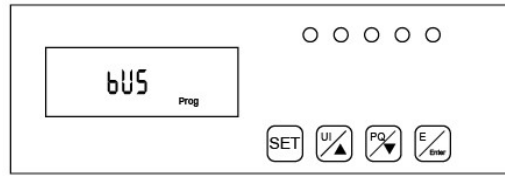
Step 6: Click the "Enter" button to enter the following interface, press the up and down arrow keys to set the meter address, the Grid meter (DC, AC and Hybrid system) address is set to 001, and the PV meter (AC and Hybrid system) address is set to 002.



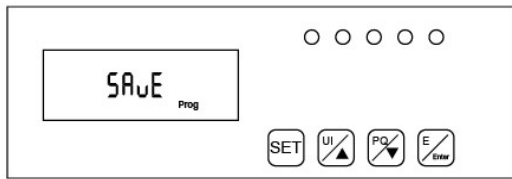
Step 7: Click the "Enter" button and the address setting is completed.



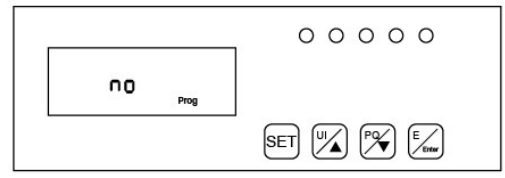
Step 8: Click the "SET" button to enter the following interface:



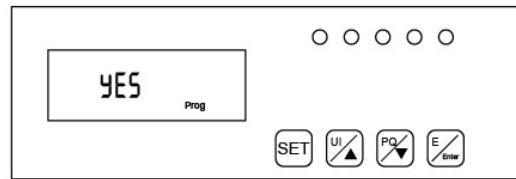
Step 9: Click the "SET" button again to enter the save interface:



Step 10: Click the "Enter" button to enter the following interface, press the up and down arrow keys, and set "no" to "YES" to save the configuration.

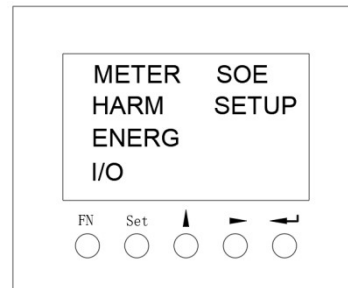
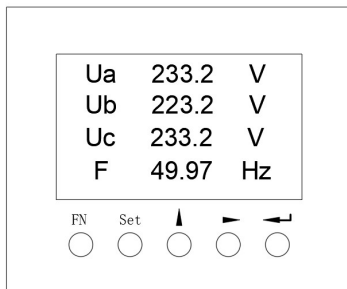


Step 11: Click the "Enter" button and the setting ends.

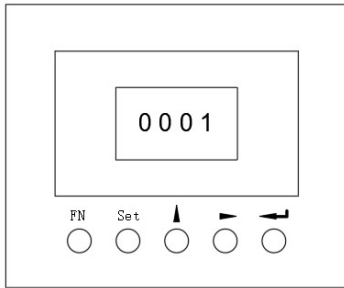


2.4.5.5.2 ACR10R

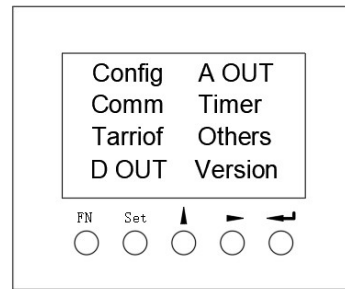
Step 1: This is the initial interface of the meter, Step 2: Click the "SETUP" button; click the "Set" button;



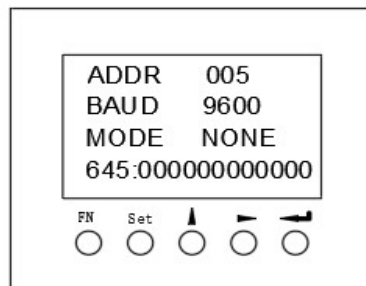
Step 3: On the password input interface, the code is "0001", confirm entering the setting interface;



Step 4: In the setting interface, select "Comm" option, enter the communication setting interface;



Step 5: Set the communication address and communication baud rate in the communication setting interface. When the meter is used as the Grid meter (DC, AC/Hybrid system), the address is set to "005". When it is used as the PV meter (AC/Hybrid system), the address is set to "006". The baud rate is set to 9600;



3. Operation

Please double check the following before operation.

1. SMILE-B3 is firmly fastened to the mounting bracket on the wall;
2. The polarity of battery wires is correct, battery wires are firmly connected;
3. 80A battery switch: OFF;
4. If PV is applied, the PV-INV switch: OFF
5. GRID / LOAD cables are firmly / correctly connected;
6. External grid AC switch is correctly connected between SMILE-B3 GRID port & GRID, AC circuit breaker: OFF;
7. If backup load is applied, external backup AC switch is correctly connected to SMILE-B3 Load port, AC circuit breaker: OFF;
8. AC contactor is correctly connected;
9. Please ensure that the communication cable has been correctly connected;

3.1 Switch on

System shall be turned on in the correct sequence to avoid any damage.

Step 1: Turn on the external grid AC breaker;

Step 2: If PV is applied, turn on the PV-INV switch;

Step 3: Press the button on the battery until the battery LED lights;

Step 4: Turn on the 80A battery switch of B3 system;

Step 5: If backup load is applied, turn on the external backup AC breaker; if not, then keep it off.

3.2 Switch off

Step 1: If backup load is applied, turn off the external backup AC breaker;

Step 2: Turn off the 80A battery switch of B3 system;

Step 3: Press the button on the battery until the battery LED off;

Step 4: Turn off the external grid AC breaker.

3.3 Emergency Procedure

When the SMILE-B3 Battery energy storage system appears to be running abnormally you can turn off the grid connected main switch directly feeding the BESS and turn off all load switches within the BESS, turn off the battery switch at the same time. To prevent a potentially fatal personal injury, if you want to repair or open the machine after the power is switched off please measure the voltage at the input terminals with a suitably calibrated voltage tester.

Before working on this equipment, please confirm that there is no grid electric supply to the BESS!

The upper cover plate cannot be opened until the DC-link capacitance inside the battery modules discharges completely about 15 minutes later.

3.3.1 Emergency Handling Plan

1. Disconnect the AC breaker.

2. Check the control power supply. If it is OK, return the power supply to find out the reason.
3. Please record every detail related to the fault, so AlphaESS can analyse and solve the fault. Any operation of equipment during a fault is strictly forbidden, please contact Alpha as soon as possible.
4. As battery cell contains little Oxygen inside and all cells have got explosion-proof valve, explosion hardly happens.
5. When the indicator light on the battery shows a red fault, check the fault type through the communication protocol, and contact our after-sales service personnel for advice.

3.3.2 Hazards

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. If one is exposed to the leaked substance, immediately perform the actions described below:

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

Eye contact: Rinse eyes with running water for 5 minutes, and seek medical attention.

Contact with skin: Wash the affected area thoroughly with soap and water, and seek medical attention.

Ingestion: Induce vomiting, and seek medical attention.

3.3.3 Fire

If a fire breaks out in the place where the battery pack is installed, perform the following countermeasures:

Fire extinguishing media


Respirator is not required during normal operations.

Use Novel 1230, FM-200 or dioxide extinguisher for battery fire.

Use an ABC fire extinguisher, if the fire is not from battery and not spread to it yet.

Fire -fighting instructions

1. If fire occurs when charging batteries, if it is safe to do so, disconnect the battery pack circuit breaker to shut off the power to charge.
2. If the battery pack is not on fire yet, extinguish the fire before the battery pack catches fire.
3. If the battery pack is on fire, do not try to extinguish but evacuate people immediately.

 **There may be a possible explosion when batteries are heated above 150° C. When the battery pack is burning, it leaks poisonous gases. Do not approach.**

Effective ways to deal with accidents

On land: Place damaged battery into a segregated place and call local fire department or service engineer.

In water: Stay out of the water and don't touch anything if any part of the battery, inverter, or wiring is submerged.

Do not use submerged battery again and contact the service engineer

4. WiFi Module Configuration

Please install the WiFi module. Download and install the APP by scanning the QR code (Figure 4.1), and directly connect to Storion-SMILE-B3 by WiFi module.



Figure 4.1 AlphaESS-APP

Step 1: Open Alpha ESS APP, click the “Wi-Fi configuration” button and enter the WiFi configuration interface as shown in Figure 4.2.

Step 2: After that please check whether your mobile phone has connected to the system hotspot, as shown in Figure 4.3.

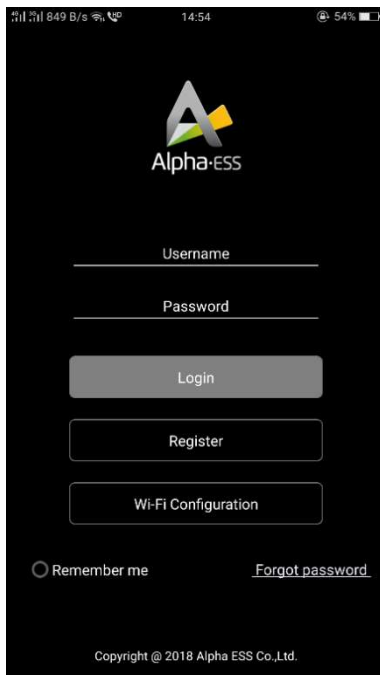


Figure 4.2 Network Setting

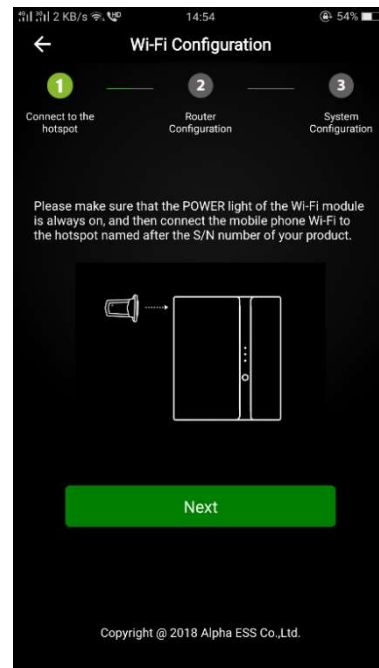


Figure 4.3 Hardware Connection

Step 3: if your mobile phone hasn't connected to the system hotspot, please open the Wi-Fi network list. Please find the hotspot named after the product SN in WLAN list and connect to it. If the Wi-Fi module is Yilian as shown in Figure 4.7, please enter the password **12345678**, otherwise please connect directly. After successful setting, please go back to APP and click "Next"

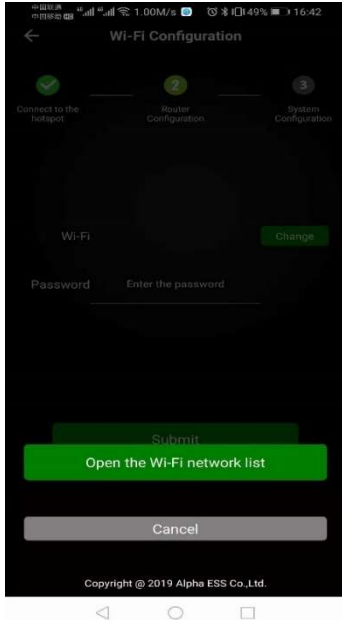


Figure 4.4 Open WiFi network list

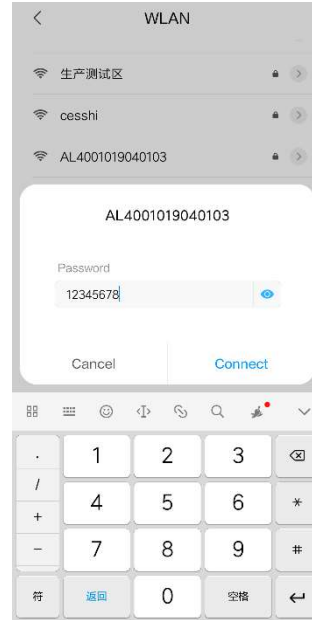


Figure 4.5 WLAN Password



Figure 4.6 ZLG WiFi module



Figure 4.7 Yilian WiFi module

Step 4: enter the WiFi account and password and then save it, the configuration is successful, click "next", as shown in Figure 4.8 and Figure 4.9.

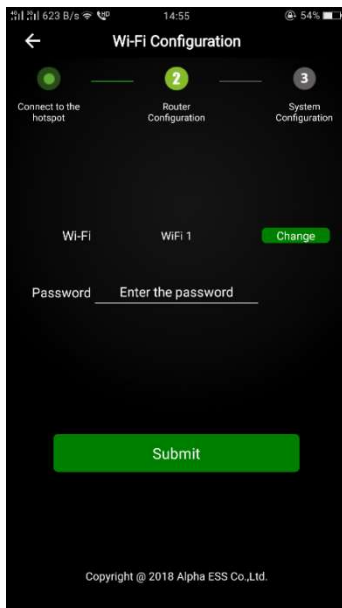


Figure 4.8 WiFi Setting

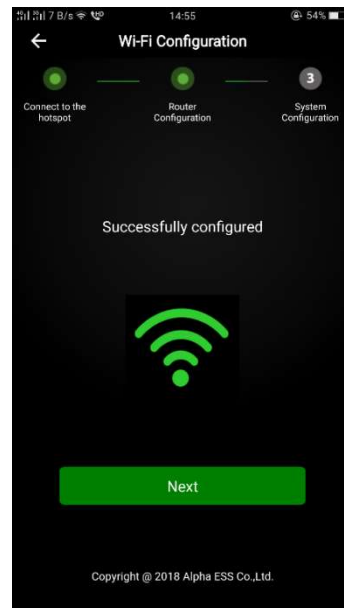


Figure 4.9 Configuration Success

Step 5: set the basic parameters, and you can see the details of equipment, click "submit" button, as shown in Figure 4.10 and Figure 4.11.

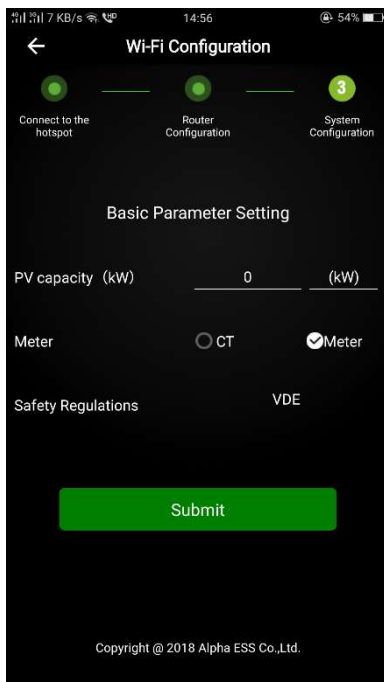


Figure 4.10 Basic Parameter Setting

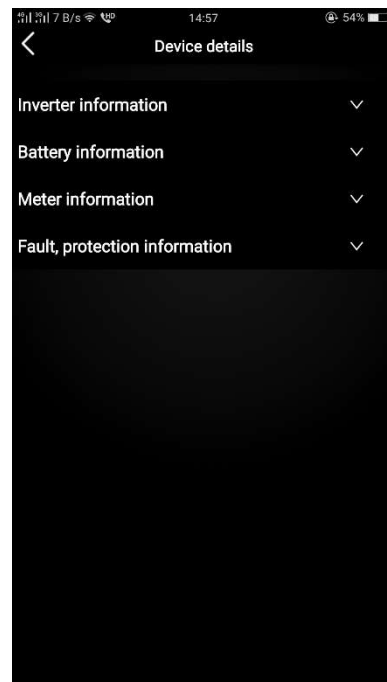


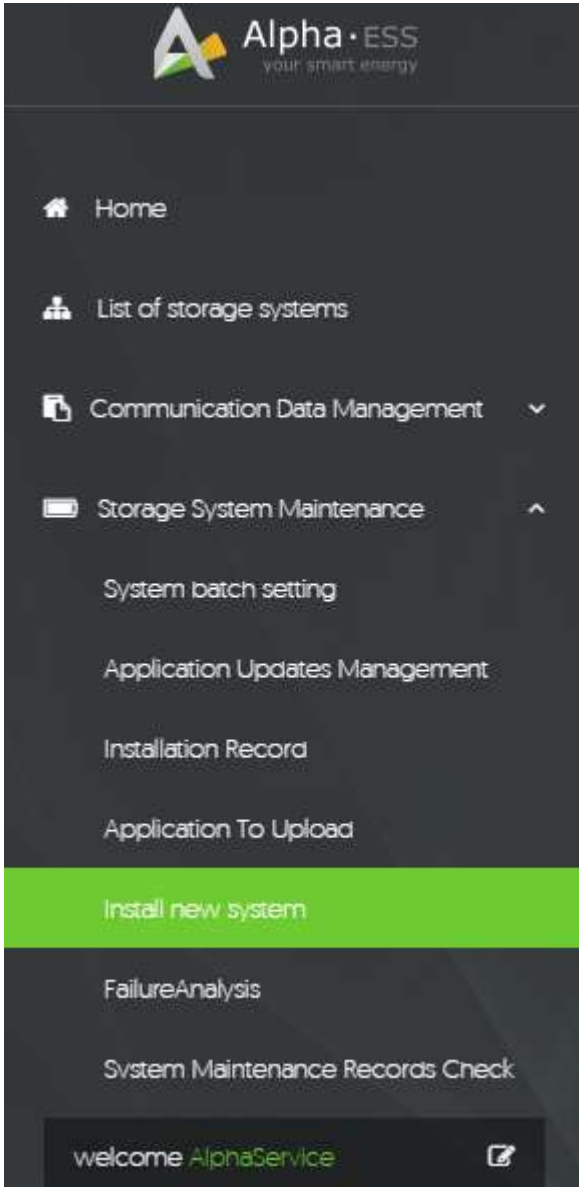
Figure 4.11 Equipment Details





Note: If without registration, please register account according to the hint after downloading and installing App.

5. System Registration

Installers who haven't yet registered need to click "Register" to visit the registration page. Please refer to "AlphaCloud Online Monitoring Webserver Installers User Manual", which you can get from AlphaESS sales and get license number from relevant sales from Alpha ESS



Log in to your installer account and choose Storage System Maintenance> "Install new system" to register new system at Alpha ESS.

Storage System Maintenance English   Logout

Install new system

* S/N

* Check Code

* License No.

* Installation Date

* Client Full Name

* Contact Number

* Contact address

Remark

Attachment 未选择任何文件

Enter the system S/N, check code, license, installation date, client name, contact number, contact address, and click the save button. The red * in front of it is required. Click the Browse button to select the attachment you want to add.

5.1 System Setup in Monitoring

The system settings of the Storion-SMILE-B3 must be carried in the installer monitoring. To do this, follow the steps below:

Step 1: Please login in the installer account, click the list of storage systems and enter the SN.

5.1.1 Basic Information

Step 2: After selecting the correct system, enter System Setup interface. Enter in the "Basic Information" and input below information:

- Address,
- Zip code,
- Contact name,
- E-Mail address,
- Currencies and
- Telephone number.

 **Note: Do not forget to click "Save" button!**

5.1.2 Meter Information

The initial setup is CT connection. If you use CTs, please ignore this section. Otherwise please find the "Meter Information" interface in the "System setup" menu.

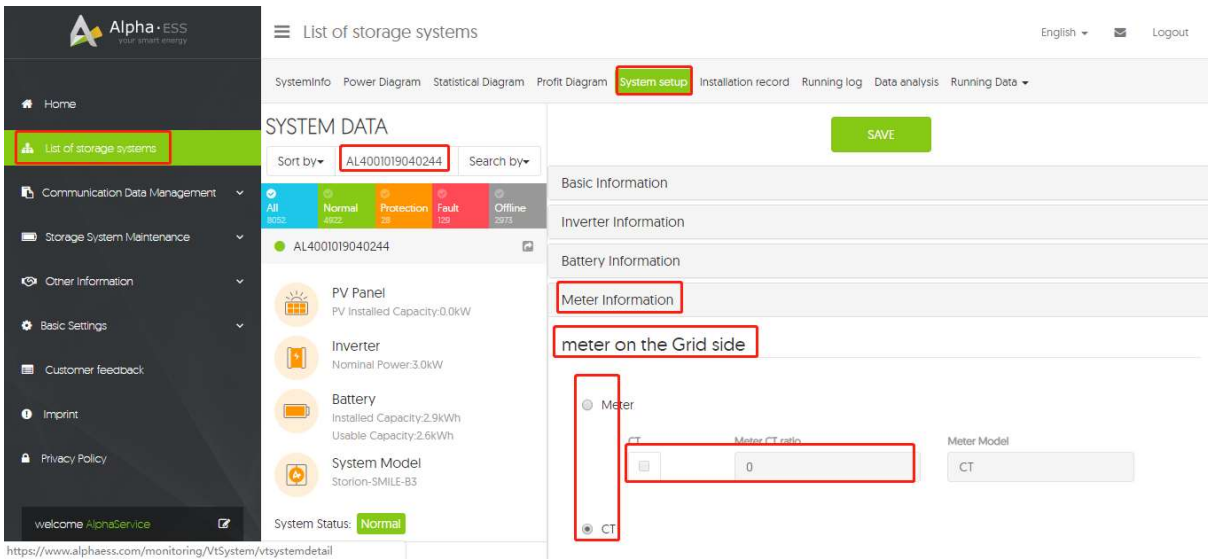


Figure 5.1 Interface of Meter Information on Server

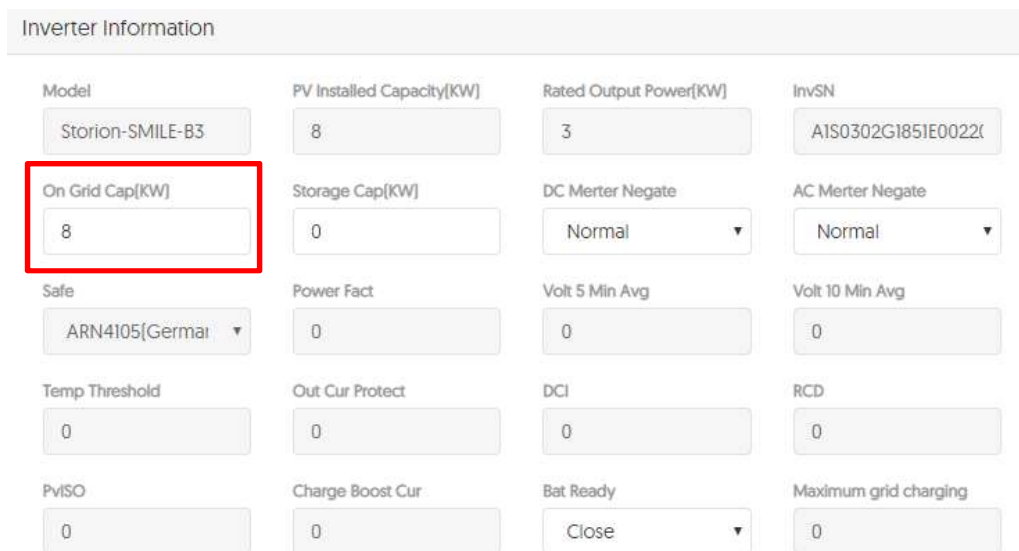
Step 3: Please select the meter information sub-menu and set the meter configuration. Choose the meter type used and, if necessary, the CT ratio for the grid meter and PV meter individually.

After that you must specify whether you have installed a CT or an electricity meter (ADL3000 or ACR10R) and in the case of electricity meters, please further select with or without CT were connected.

1. If a CT is installed, select directly the point "CT"
2. If a meter is installed, select the item "meter"
 - a) If a CT meter is installed, select in addition to the second point "CT" and set the CT ratio.

5.1.3 Inverter Information

Step 4: If PV modules are installed, please set the installed PV power, such as 8 kWp in "On Grid Cap (kW)" of "Inverter Information" interface



5.1.4 Other Information

Step 5: Finally, select the "Other Information" submenu and set the following parameter:

- ACDC mode: it should be AC mode
- Time zone
- Data upload frequency: SMILE-B3 has second level data, you can choose it as 10s data if you wish.

Other Information

System Mode Normal ▼	Allow automatic updates Yes ▼	Update Config Time <input type="text"/>	ACDC AC ▼
Max. Feed in Rate 100	Meter Phase 0	EMS Set Function Mode ▼	BackupBox SN 0
SuperCableBox SN <input type="text"/>		Power source <input type="text"/>	Ems language English ▼
Time zone [UTC+01:00] Amsterdam, Berlin, Bern, Rome, St ▼		Firmware version number V1.02	Allow Sync Time Yes ▼
Data upload frequency 300[s] ▼			

6. On-line Monitoring

6.1 Account Registration

You can create a new account on our webserver for the normal monitoring. In addition, a part of our warranty is based on this connection to our webserver.

The data produced prior to registration can be synchronized to the webserver.

Please use the following steps:

Step 1: Open the portal: www.alphaess.com.

Step 2: Please fill in “Username”, “Password” and click “Login” if you have already registered.

If not, please register by filling in the following web form.

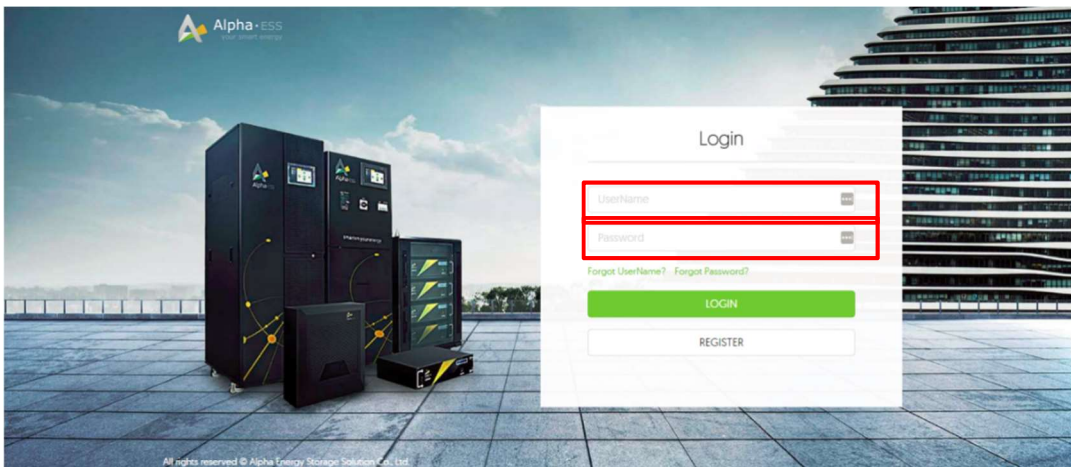


Figure 6.1 Monitoring Login Interface

Register

User Type * S/N

End user *

* Username

* Password * Confirm Password

* Country Province/State City

Address * Zip Code

* Language * Contacts * Contact Number

English

* E-mail

Time zone

{UTC-12:00} International Date Line West

Compulsorily upgrade?

Read and accept << [Terms and Conditions](#) >>

In this form, all fields with a red star are compulsory, and you can select the finally users or installation procedures.

***Serial number:** EMS serial number (please see the nameplate of the inverter)

***Username:** 5-15 letters / numbers

Note: User name cannot be changed anymore after creation.

***Password:** 5-15 letters / numbers / characters

More detailed information is available in the online monitoring Web server User manual, which can be downloaded from AlphaESS homepage.

Figure 6.2 Account Registration Interface