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# INSTALLATION MANUAL ENERGY STORAGE SYSTEM (ESS) **STORION-SMILE-T10 (OUTDOOR)**



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## Version Information

Version	Date	Content
V01	25062019	New

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### 1.1 System Introduction

AlphaESS Storion-SMILE-T10 (incl. M4856-S, HV50056 and SMILE-T10-INV) can be applied in DC-coupled systems (mostly new installation), AC-coupled systems (mostly retrofit) and Hybrid-coupled systems (mostly retrofit, and PV capacity-increase), as the following scheme:

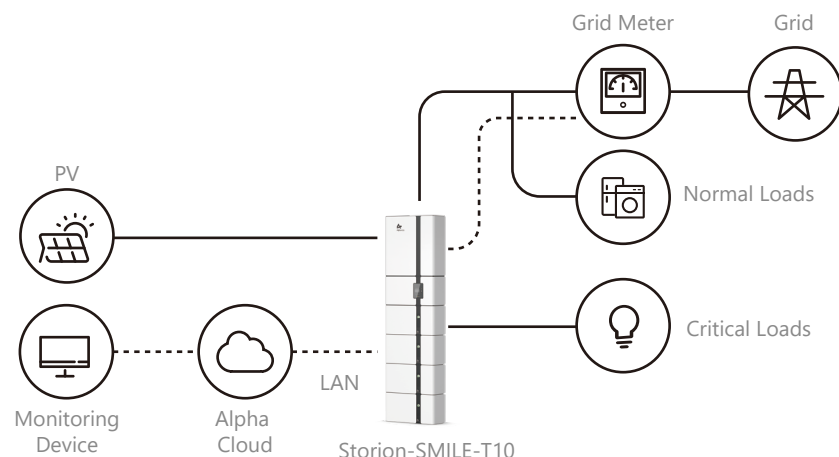


Figure 1 DC-coupled Storage System – Scheme

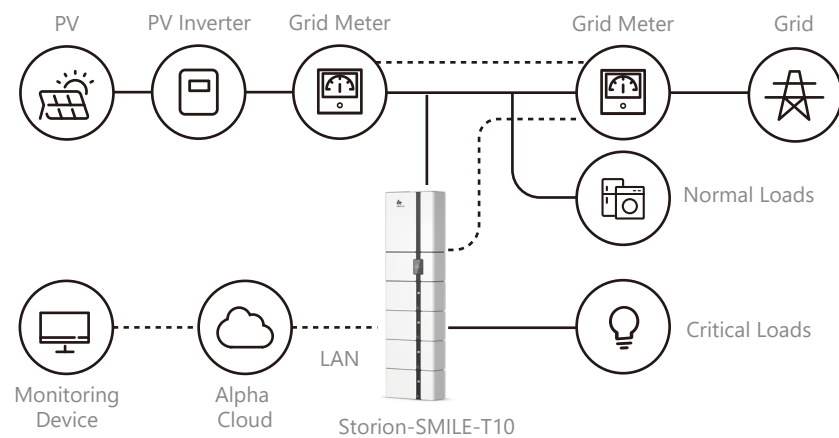


Figure 2 AC-coupled Storage System – Scheme

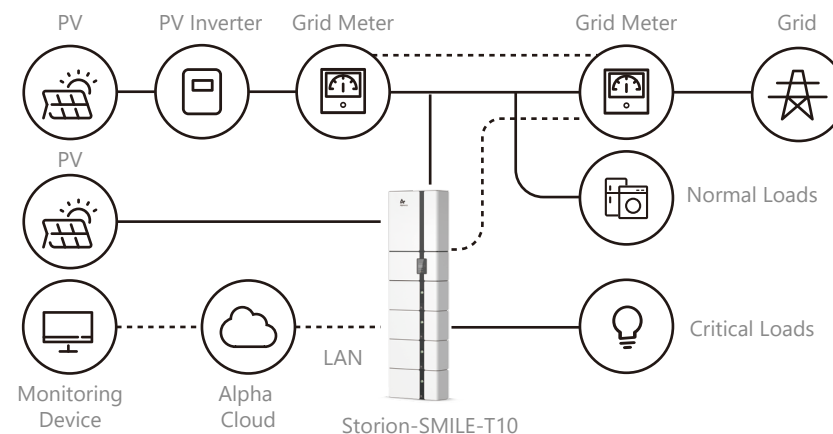


Figure 3 Hybrid-coupled Storage System – Scheme



#### CAUTION:

For the AC-/ Hybrid-coupled system, unlike DC, two power meters are to be mounted. In Germany some federal states require that only AC solutions be used if more than 10 kWp capacity of PV is installed, the meters of grid company must be also installed in the system as the following figure shows

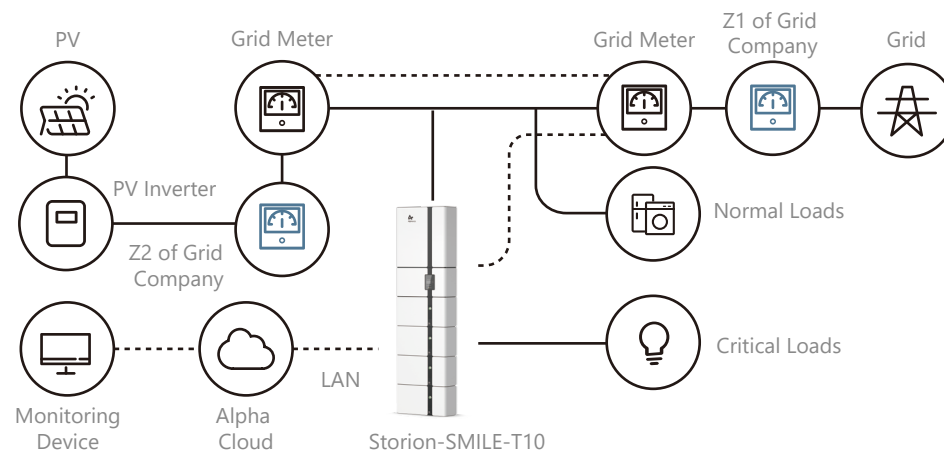


Figure 4 AC-coupled Storage System – Scheme, Germany > 10 kWp

## 1.2 General Precautions

### ! DANGER

#### **Danger to life due to high voltages of the PV array, battery and electric shock.**

When exposed to sunlight, the PV array generates dangerous DC voltage which will be present in the DC conductors and the live components of the inverter. Touching the DC conductors or the live components can lead to lethal electric shocks. If you disconnect the DC connectors from the system under load, an electric arc may occur leading to electric shock and burns.

- ★ Do not touch uninsulated cable ends.
- ★ Do not touch the DC conductors.
- ★ Do not open the inverter and battery.
- ★ Do not wipe the system with damp cloth.
- ★ Have the system installed and commissioned by qualified people with the appropriate skills only.
- ★ Prior to performing any work on the inverter or the battery pack, disconnect the inverter from all voltage sources as described in this document.

### ! WARNING

#### **Risk of chemical burns from electrolyte or toxic gases.**

During standard operation, no electrolyte shall leak from the battery pack and no toxic gases shall form. Despite careful construction, if the Battery Pack is damaged or a fault occurs, it is possible that electrolyte may be leaked or toxic gases formed.

- ★ Do not install the system in any environment of temperature below -10°C or over 50°C and in which humidity is over 85%.
- ★ Do not touch the system with wet hands.
- ★ Do not put any heavy objects on top of the system.
- ★ Do not damage the system with sharp objects.
- ★ Do not install or operate the system in potentially explosive atmospheres or areas of high humidity.
- ★ Do not mount the inverter and the battery pack in areas containing highly flammable materials or gases.
- ★ If moisture has penetrated the system (e.g. due to a damaged enclosure), do not install or operate the system.
- ★ Do not move the system when it is already connected with battery modules.
- ★ Secure the system to prevent tipping with restraining straps in your vehicle.
- ★ The transportation of AlphaESS Storion-SMILE-T10 must be made by the manufacturer or an instructed personal. These instructions shall be recorded and repeated.
- ★ A certified ABC fire extinguisher with minimum capacity of 2kg must be carried along when transporting.
- ★ It is totally prohibited to smoke in or close to the vehicle when loading and unloading.
- ★ For the exchange of a battery module, please request for new hazardous goods packaging if needed, pack it and let it be picked up by the suppliers.
- ★ In case of contact with electrolyte, rinse the affected areas immediately with water and consult a doctor without delay.

### ! CAUTION:

#### **Risk of injury through lifting or dropping the system.**

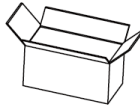







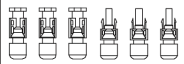
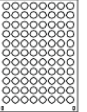
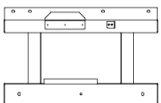
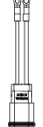


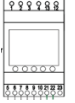
The inverter and battery are heavy. There is risk of injury if the inverter or battery is lifted incorrectly or dropped during transport or when attaching to or removing from the wall.

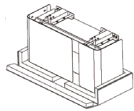
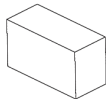



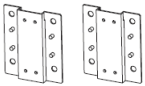














- ★ Lifting and transporting of the inverter and battery must be carried out by more than 1 person.

## 1.3 Parts List

Check the following parts list to ensure it is complete.

AlphaESS delivers a total system separately on site to client, this consists of:

SMILE-T10_INV				
				
T10-INV box (X1)	Communication cable (X1) Screw package: Expansion tube (X8) Expansion screw (X8)	Battery connector: Positive-Negative power line (X1)	AC terminal (X12)	Cable tie (X30)
				
Communication cable (X1) BAT-BAT	Cable bond (X1)	Hexagon nuts with flange (X2)	DC connectors: Positive X3, nega-tive X3	Bracket A (X1)
				
Bracket B (X1)	AC auxiliary power cable (X1)	Installation Manual (X1)	3-phase Meter (X1): ADL3000 or ACR10R	

M4856-S				
				
Battery pack (X1)	PE Protective bag (X1)	Screw M5*10(X4)	Screw package: Expansion tube (X4) Expansion screw (X4)	Gasket (X4)
				
Bracket (X2)	Battery connector: Black power line (X1)	Battery communication line (X1)	Hexagon nuts with flange (X4)	Cable tie (X6)
HV50056				
				
HV50056 box (X1)	RJ45 Connectors (X12)	Screw package: Expansion tube (X5) Expansion screw (X5)	Battery power cables: Positive power cable (X1) Negative power cable (X1)	Communication cable (X1) BAT-HV
				
Terminal resistance (X1)	Cable bond (X1)	Hexagon nuts with flange (X4)	User Manual (X1): M4856-S & HV50056	Quick Installation Manual (X1): M4856-S & HV50056

# 1.4 System Appearance

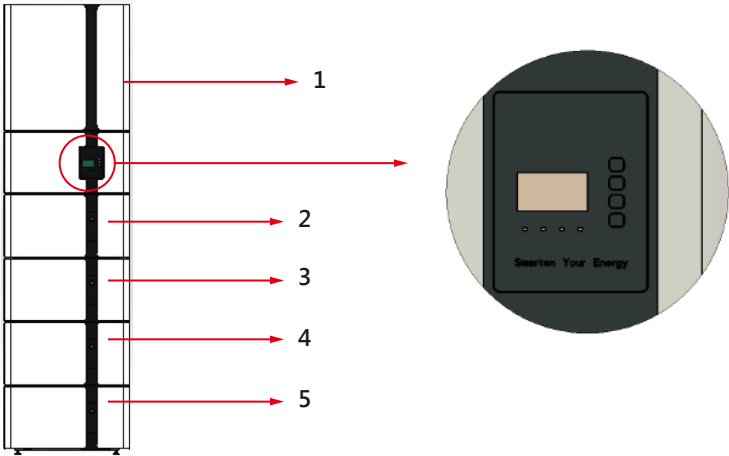


Figure 5 Storion-SMILE-T10 Delivery Scope

Object	Description
1	Hybrid Inverter with Cable Box
2	HV50056 (High-voltage Control Box)
3	M4856-S (BAT1)
4	M4856-S (BAT2)
5	M4856-S (BAT3)
6	M4856-S (BAT4)

## 1.4.1 Battery

### 1.4.1.1 Specifications

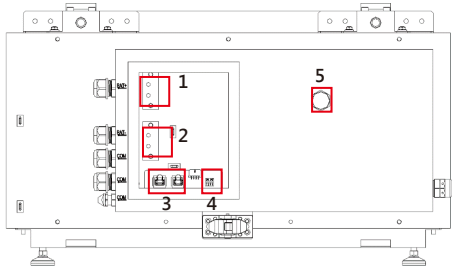


Figure 6 M4856 Interface Definition

Object	Description
1	Positive Pole
2	Negative Pole
3	2 x COM Port (CAN)
4	Dip Switch
5	LED

1.4.1.2 LED Display

In normal condition, LED display three status:

Status	Normal	Protection	Fault
LED Display	Green light blinks for 1 sec	Red light blinks for 1 sec	Red and green lights blink for 1 sec

1.4.2 HV50056  
1.4.2.1 Specifications

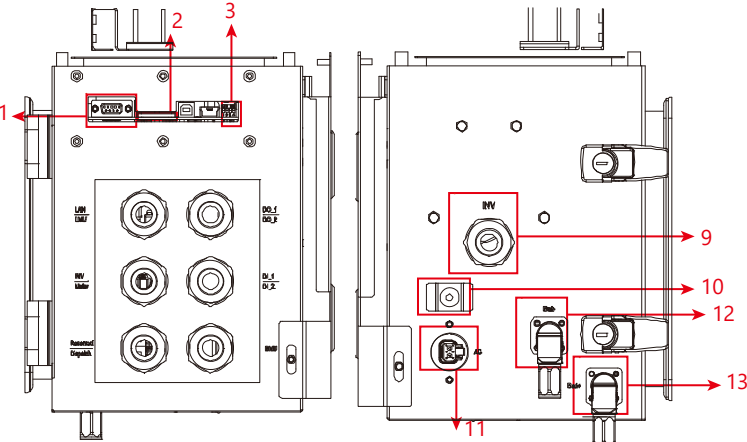


Figure 7 High-voltage Control Box – Left & Right View

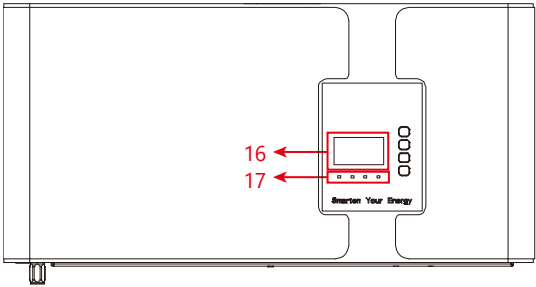


Figure 8 High-voltage Control Box – Front View

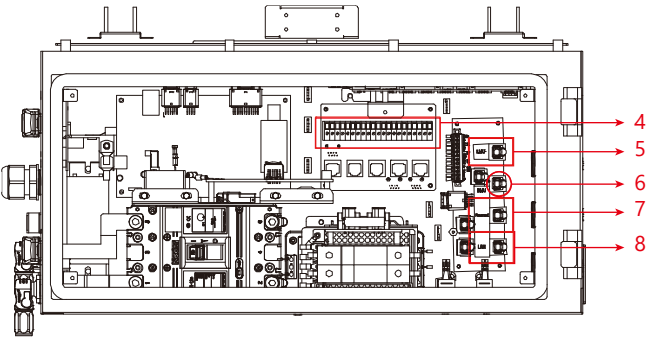


Figure 9 High-voltage Control Box – Front View, Inside

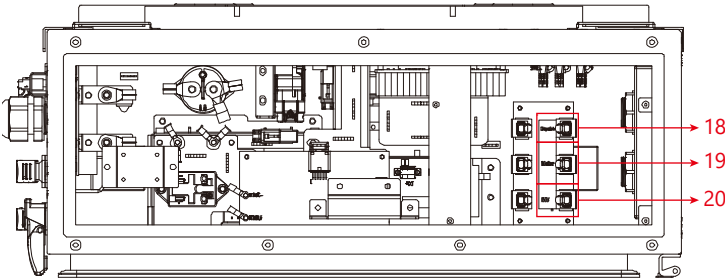


Figure 10 High-voltage Control Box – Top View

No.	Description	No.	Description
1	External LCD Wiring Port	11	AC Auxiliary Input
2	SD Card	12	Bat+
3	Dip Switch	13	Bat-
4	Molded Case Circuit Breaker (MCCB)	14	Molded Case Circuit Breaker (MCCB)
5	LMU COM Port (CAN)	15	AC Switch (For AC Auxiliary Input)
6	BMU COM Port (CAN)	16	LCD Screen
7	COM Port Reserved	17	LED Indicator
8	LAN COM Port	18	External Dispatch COM Port
9	INV + / INV -	19	EMS Meter Communication Port
10	Earthing Point X 2 (Required to connect with grounding copper)	20	INV COM Port

1.4.3 Inverter Cable Box

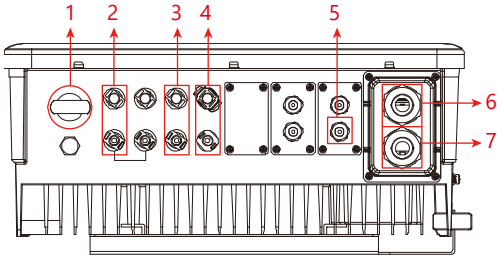


Figure 11 Inverter (DE)

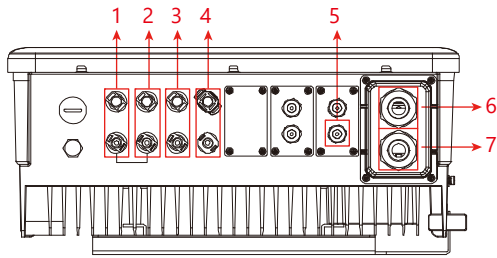


Figure 8 Inverter (AU)

Item	Description (DE)
1	DC Switch
2	PV2
3	PV1
4	Battery +/-
5	EMS COM port
6	On-Grid Wiring Ports
7	Back Up Wiring Ports
8	Earthing Point X 2 (Required To Connect With Grounding Copper)


Object	Description (AU)
1	PV1
2	PV2
3	PV3
4	Battery +/-
5	EMS COM port
6	On-Grid Wiring Ports
7	Back Up Wiring Ports
8	Earthing Point X 2 (Required To Connect With Grounding Copper)

1.5 Liability Limitation

- Any product damage or property loss caused by the following conditions AlphaESS does not assume any direct or indirect liability.
- Product modified, design changed or parts replaced without AlphaESS authorization;
  - Changes, or attempted repairs and erasing of series number or seals by non AlphaESS technician;
  - System design and installation are not in compliance with standards and regulations;
  - Failure to comply with the local safety regulations (VDE for DE, SAA for AU);
  - Transport damage (including painting scratch caused by rubbing inside packaging during shipping). A claim should be made directly to shipping or insurance company in this case as soon as the container/package is unloaded and such damage is identified;
  - Failure to follow any/all of the user manual, the installation guide and the maintenance regulations;
  - Improper use or misuse of the device;
  - Insufficient ventilation of the device;
  - The maintenance procedures relating to the product have not been followed to an acceptable standard;
  - Force majeure (violent or stormy weather, lightning, overvoltage, fire etc.);
  - Damages caused by any external factors.

02 INSTALLATION

This Manual introduces the basic steps on how to install and set up Alpha ESS Storion-SMILE-T10  
M4856-S is a sealed component with no access to battery terminals or cell components within module.

**NOTE:** please pay attention to unpacking the battery, the worst case is that some components could be damaged.

2.1 Installation Site and Environment  
2.1.1 General

The M4856-S has two versions, one is indoor, and another is outdoor. The SMILE-T10 energy storage system (indoor version) can only be installed in an indoor location. The SMILE-T10 energy storage system (outdoor version) can be installed in an outdoor or an indoor location.  
The SMILE-T10 systems should be installed in a room, where access to SMILE-T10 is not obstructed by the structure of the building, fixtures and fittings within the room. The SMILE-T10 adopts to natural ventilation. The location should be clean, dry and adequately ventilated. The room's entry doors and panels shall open in the direction of egress and allow unobstructed access to the SMILE-T10 for installation and maintenance purposes.

The following location are **not allowed** for installation:

- habitable rooms;
- in ceiling spaces;
- wall cavities;
- on roofs not specifically deemed suitable;
- areas of access/egress;
- under stairways;
- under access walkways;
- sites where the freezing point is reached, like garages, carports or other places;
- sites with humidity and condensation over 85%;
- sites which are salty and where humid air can penetrate;
- earthquake areas –additional security measures are required here;
- sites that are higher than 3000 meters above the sea level;
- sites with explosive atmosphere;
- sites with direct sunlight;
- sites with extreme change of ambient temperature;
- wet rooms;
- sites with highly flammable materials or gases; or
- sites with a potentially explosive atmosphere;

### 2.1.2 Restricted Locations

Where the SMILE-T10 is located on or within 300mm of the wall or structure separating it from the habitable room, the barrier shall extend —

- 1000 mm beyond the vertical sides of the SMILE-T10;
- 300 mm above the SMILE-T10; and
- To the extent of the bottom of the SMILE-T10.

Please refer to Figure 9

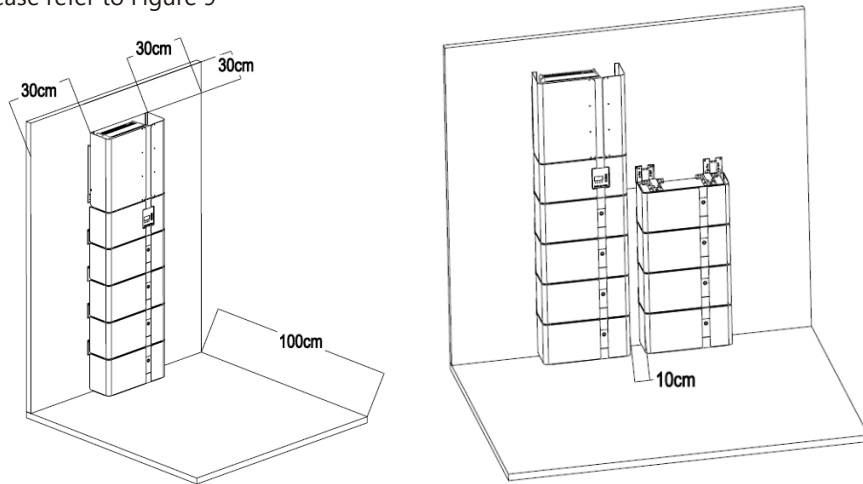


Figure 12 Distance limit of installation to Neighboring Objects

Where the top of the SMILE-T10 is within 300 mm of the ceiling or structure above the SMILE-T10, the ceiling or structure surface shall be suitably non-combustible for an area of 600 mm past the extremities of the SMILE-T10.

Where more than 4 batteries are installed, some batteries shall be installed beside, distance between two rows batteries shall be not less than 100 mm. SMILE-T10 shall be mounted with the highest point no greater than 2.2 m above the floor or platform.

### 2.2 Installation

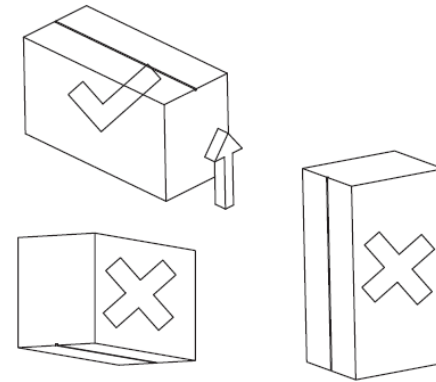


Figure 13 Unpacking the Battery

**Step 1** Take out the battery from the packaging box.



**NOTE:** the packaging box must be placed in accordance with the marked direction, the upward carton, unpacking in the other direction is wrong.

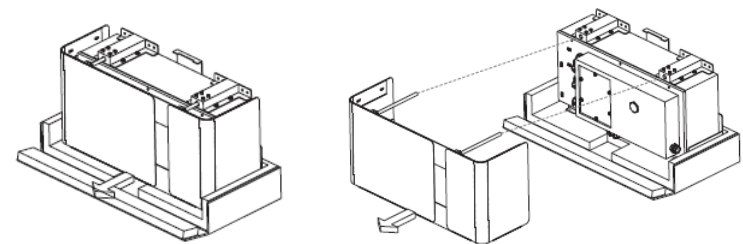
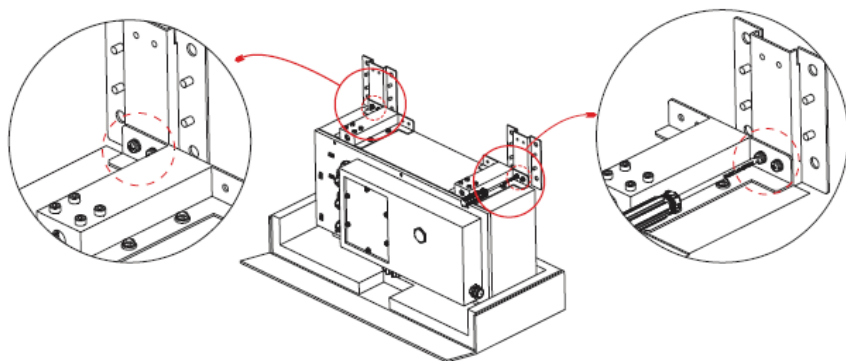


Figure 12 Removing Front Panel

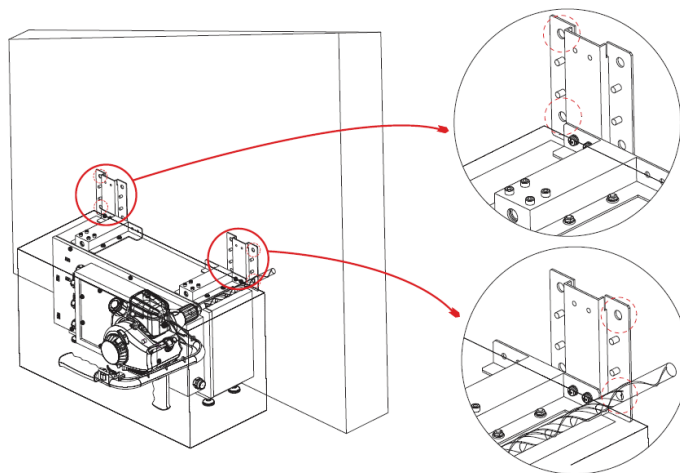
**Step 2** Pull the buckle from the bottom right in the middle and pull the top two guide rods to remove the front panel.





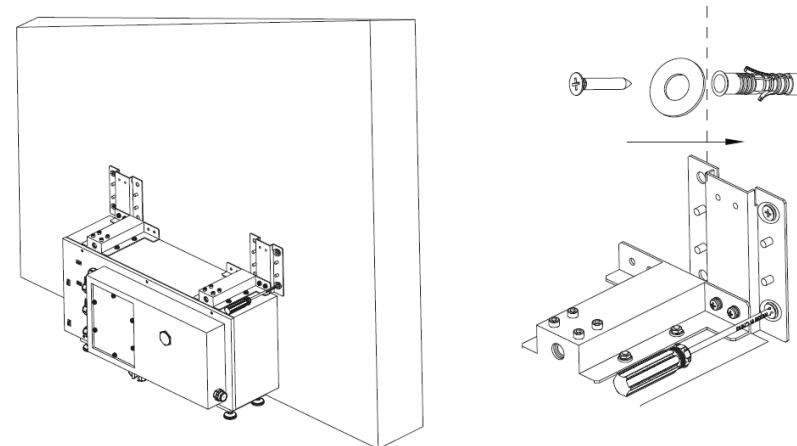
**Figure 15 Assembling Battery Brackets**

**Step 3** Use a screwdriver to assemble the battery mounting bracket onto the outside of the battery, as Figure 12 shows.



**Figure 16 Placing Battery**

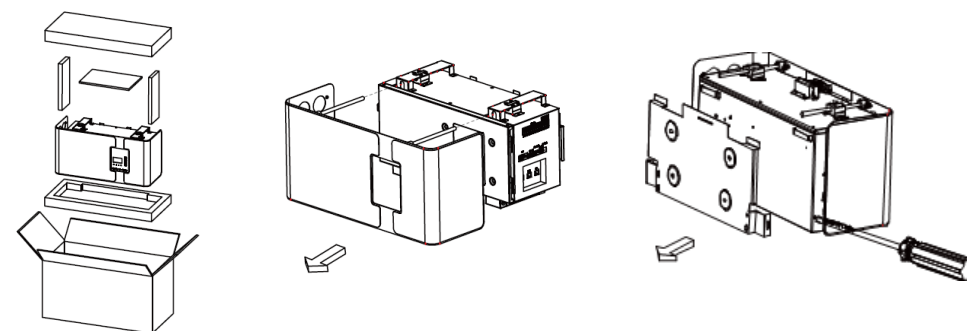
**Step 4** Confirm the installation place at first.  
Push the battery against the wall and confirm the location of the battery with a horizontal ruler.  
Place the PE bag on the battery to block out the dust before drilling.  
Please drill four holes (two on each side) directly on the wall at the marking positions of the brackets with an impact drill (bit  $\phi$  8.0mm, length 20cm), and the depth of each hole should be about 7 cm.



**Figure 17 Mounting Battery**

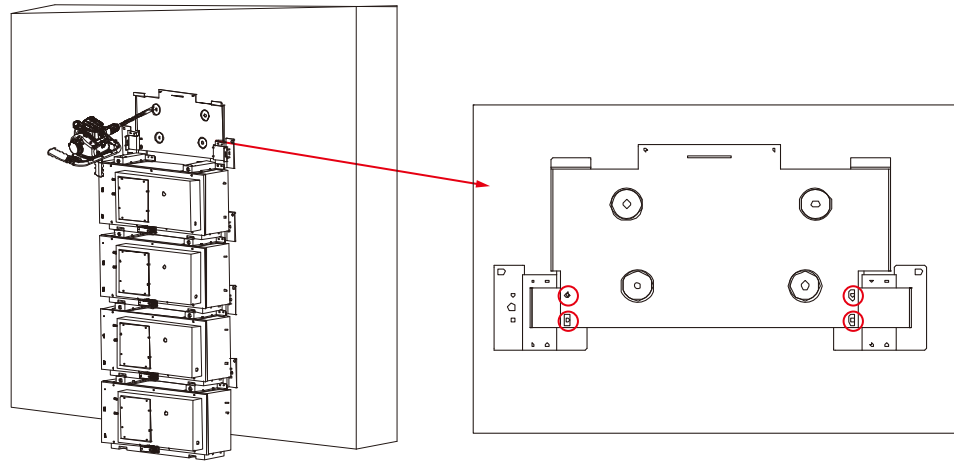
**Step 5** Insert the expansion tube into the drilled hole. Pass the expansion screw through the gasket and lock with a screwdriver, as Figure 14 shows.

M4856-S is stackable with maximum of 4 batteries in each row. To install another battery repeat Steps 1~5



**Figure 18 Unpacking the High-voltage Control Box**

**Step 6** Take the HV50056 out of the packaging box. Pull out the top two guide rods and remove the front panel. Remove the rear bracket from the HV50056, as shown in Figure 17.

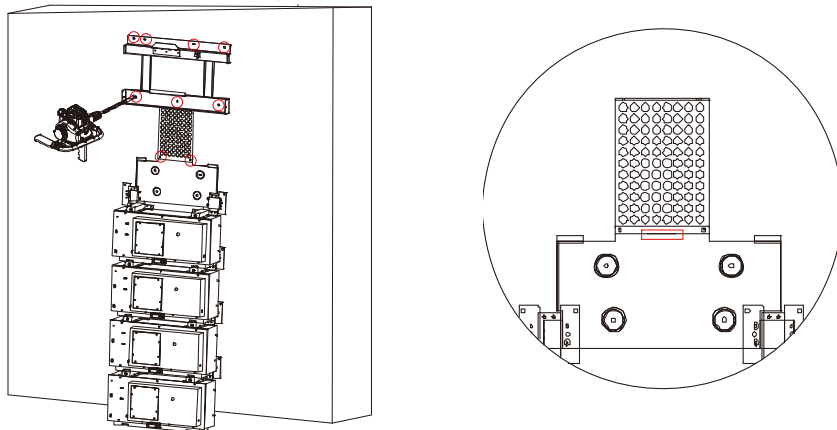


**Figure 19 Fixing the Rear Bracket of HV50056**

**Step 7** Fix the HV50056 rear bracket as shown in Figure 16.

- 1 Find the positioning point and mark it.
- 2 Use the impact drill (drill  $\phi 10.0\text{mm}$ , length 20cm) to directly drill the hole in the marking position of HV50056 rear bracket, the depth of the drilled hole should be 7cm.
- 3 After the drilling is completed, insert the expansion tube into the drilled hole, and fix the rear bracket with a 10mm self-tapping screw by using 10MM sleeve (SW10).
- 4 Fix the HV50056 box rear bracket with the flange nut and use a 7MM sleeve on the two L-shaped brackets of the battery (SW7).

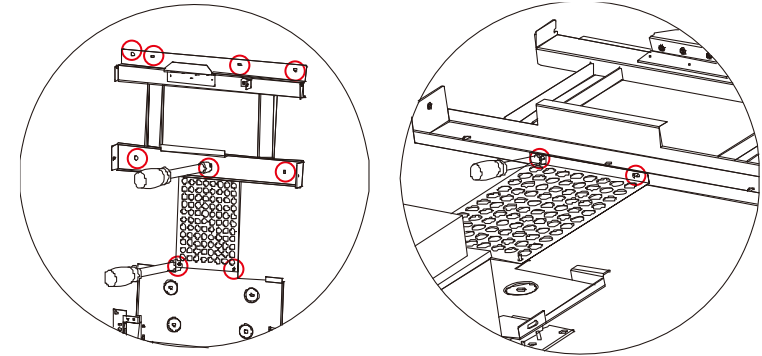
**NOTE:** Place the PE bag on the battery to block out the dust before drilling.



**Figure 20 Fixing of the Rear Bracket of HV50056**

**Step 8** Fix the bracket A of the inverter on the rear bracket of HV50056 with the flange nuts, as shown in Figure 18.

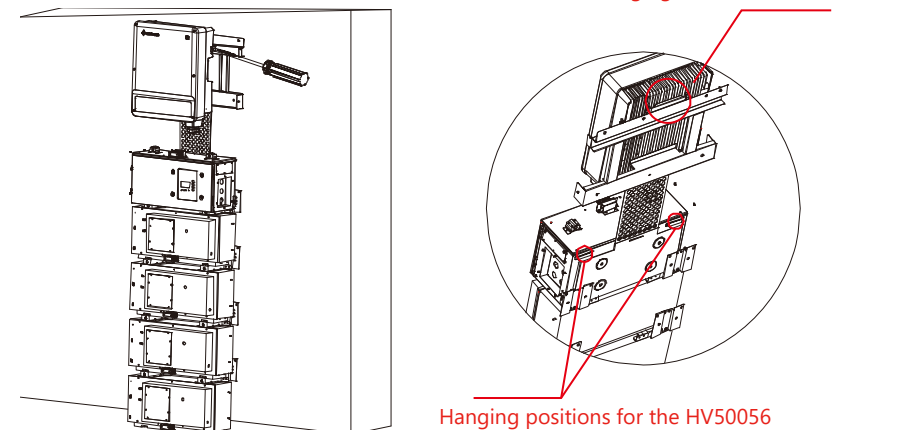
The bottom of the bracket A shall be placed at the same horizontal line with the rear bracket of HV50056.



**Figure 21 Installation of the Bracket A of the Inverter**

**Step 9** Fix the inverter B bracket as shown in Figure 19.

- 1 Find the positioning point and mark it.
- 2 Use the impact drill (drill  $\phi 10.0\text{mm}$ , length 20cm) to directly drill the hole in the marking position, the depth of the hole is about 7cm.
- 3 After the drilling is completed, insert the expansion tube into the drilled hole, and fix the bracket B with a 10mm self-tapping screw by using 10MM sleeve (SW10).
- 4 Fix bracket B with the flange nut and use a 7MM sleeve on the two L-shaped brackets of the battery (SW7).



**Figure 22 Installation of the HV50056 and the Inverter**

**Step 10** Please hang the HV50056 on the rear bracket of HV50056 and hang the SMILE-T10-INV on the bracket B of the inverter. Fix them with screws.

## 2.3 Wiring

**Step 1** Before wiring please remove the front maintenance baffle of the batteries with a cross screwdriver.

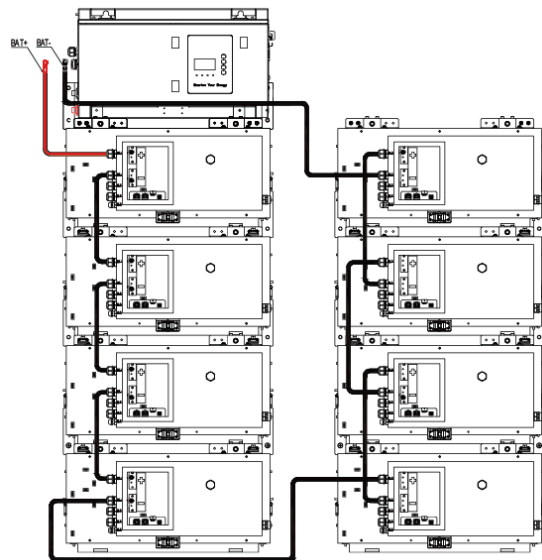


Figure 23 Connection of Power Cables on Battery Side

**Step 2** Please connect the power cables as referred in Figure 21



Figure 24 Battery Power Cable

Battery power cable connection sequence:  
Through the waterproof cap→through the sealing ring→through the joint, fixed to the copper bar with M5 nut inside of the battery.

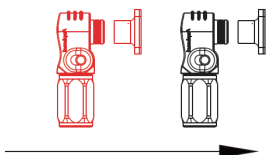


Figure 25 Power Cable Plug Connectors

**HV50056 & Battery power cable connection sequence:** one side terminal shall go through the waterproof cap→through the sealing ring→through the joint of the battery, fixed to the copper bar with M5 nut inside of the battery; The plug connector on the other side shall be connected to the plug port of the HV50056 with the corresponding color. When a snap sound is heard, the connection is correct.

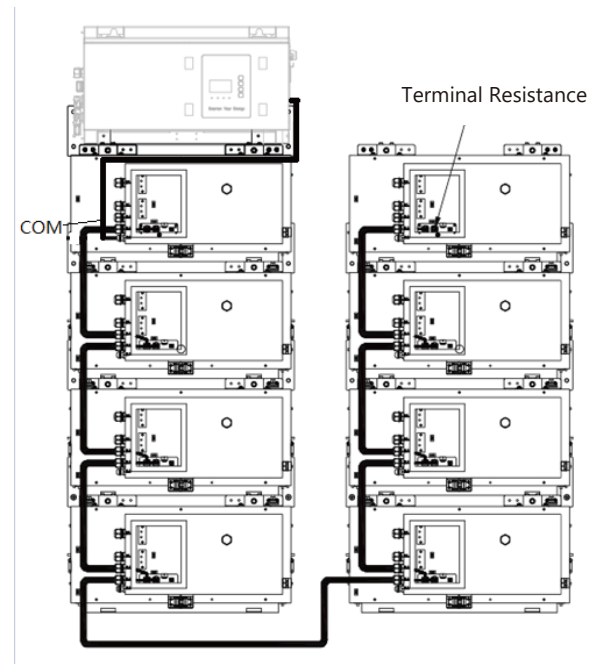


Figure 26 Connection of Communication Cables on Battery Side

**Step 3** Please connect the communication cables as referred in Figure 24

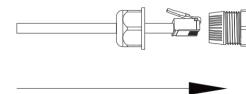


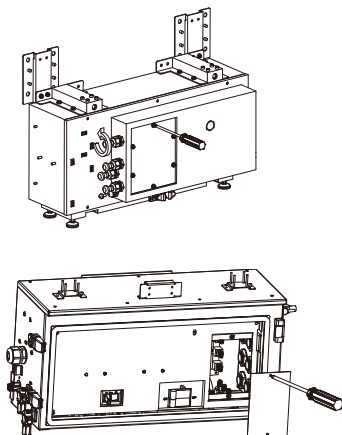
Figure 27 Communication Cables

**Battery communication cable connection sequence:** the RJ45 connector of the communication cables shall go through the waterproof cap → through the sealing ring →through the joint and inserted in to the COM port inside of the battery.

**HV50056 & Battery communication cable connection sequence:** the RJ45 connector on one side shall go through the waterproof connector inserted into the COM port inside the battery which is nearest to HV900112. The RJ45 connector on the other side shall go through the waterproof cover inserted into the LMU port inside the HV50056.

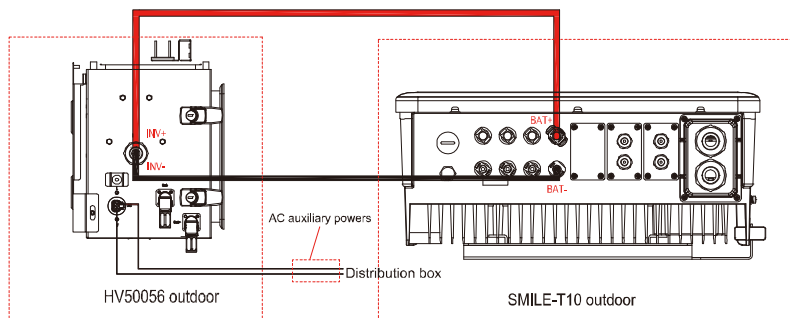
**NOTE:** The communication cable can go directly through waterproof sealing ring, there is no need to make net cable on the spot.

**Terminal Resistance:** Insert the terminal resistance into the last COM port of the last battery.



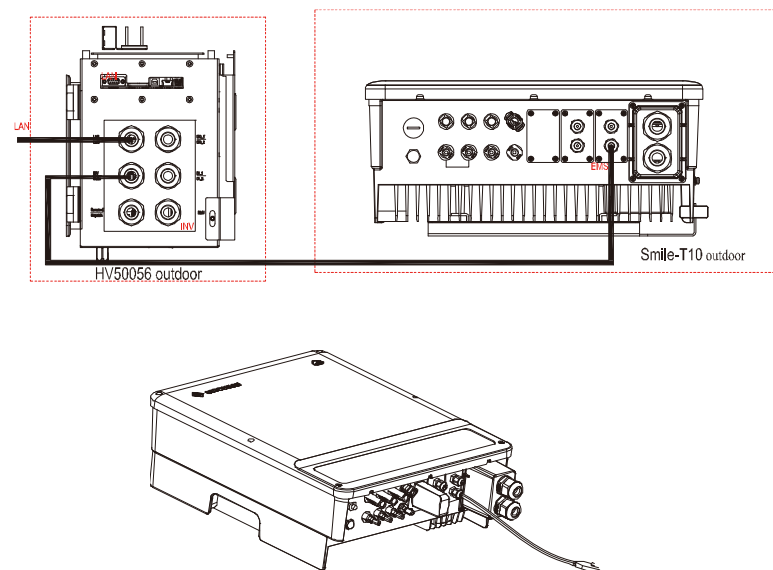
**NOTE:**

1. To remove the waterproof connector, it shall be rotated counterclockwise according to the installation procedure.
2. Use a screwdriver to remove the maintenance baffle before wiring.
3. The battery has no circuit breaker for protection. Please be careful, do not short the positive and negative terminals during installation.
4. The waterproof sealing ring needs to be confirmed that it shall be inserted into the plastic claw ring during installation.



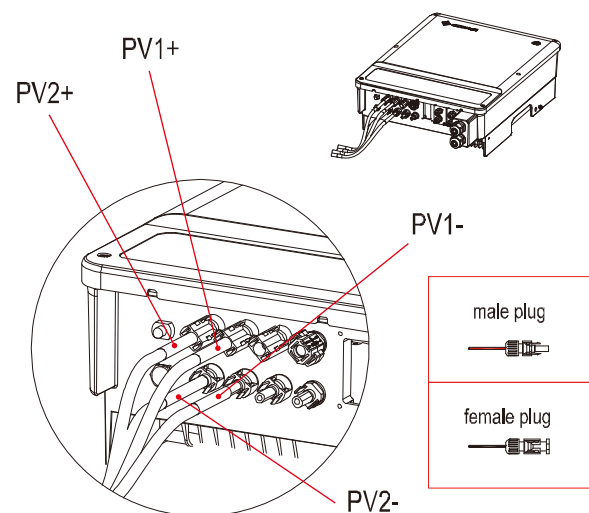
**Figure 28 Connection of the Power Cables and AC Auxiliary Cable**

**Step 4** Please connect one DC power cable from INV+ port on HV50056 to BAT+ port on SMILE-T10-IN, and another DC power cable from INV- port on HV50056 to BAT- port on SMILE-T10-IN. One side of the AC auxiliary power cables should be connected to the AC auxiliary port on HV50056 and another side should be connected to the distribution box, as shown in Figure 26.



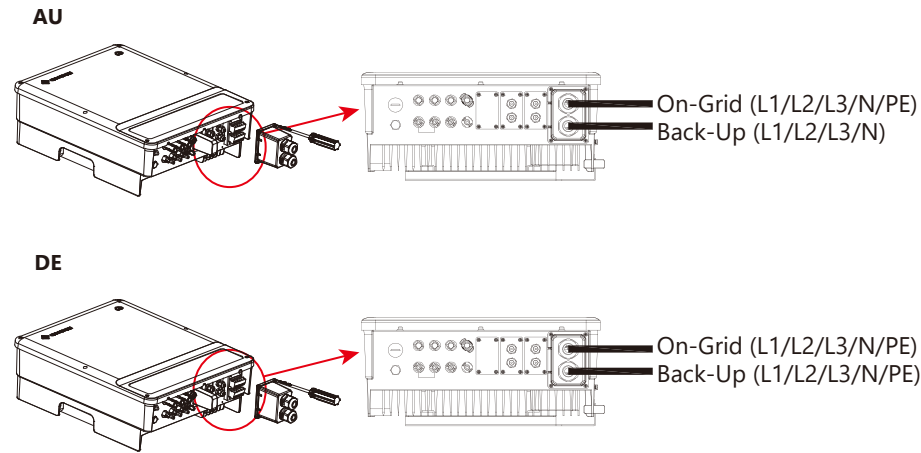
**Figure 29 Connection of the Communication Cables on the Inverter Side**

**Step 5** Connect the communication cable between HV50056 and the inverter, take the inverter's own net cable out. First remove the cover, then pass the net cable through the waterproof cap, sealing ring and connector, connect to the corresponding port, and then the cover should be fixed back and the waterproof cap should be tightened, as shown in Figure 27.



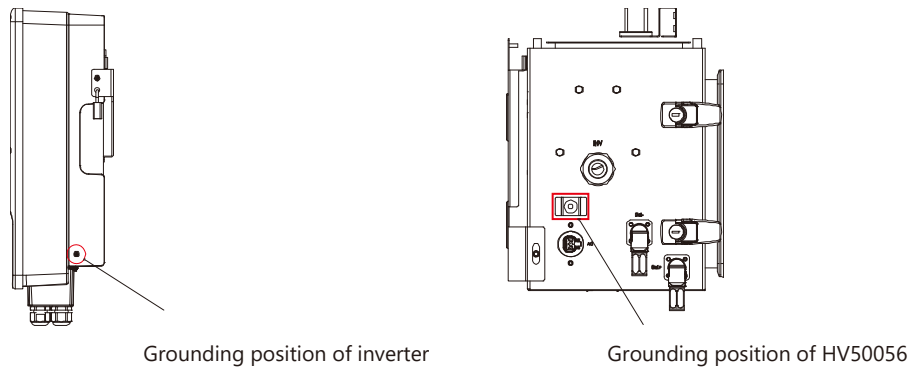
**Figure 30 Connection of PV cables**

**Step 6** Connect the PV MC4 connector to the PV ports of the inverter.



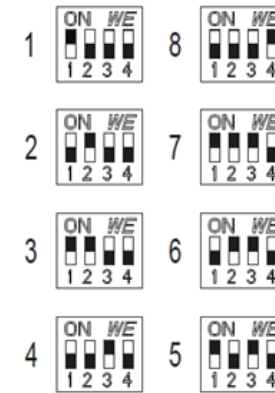
**Figure 31 Connection of AC cables**

**Step 7** Remove the AC cable terminal strip cover, crimp the AC cable and connect it to the corresponding terminal block position, and then fix back the cover, as shown in Figure 30.



**Figure 32 Earthing Point**

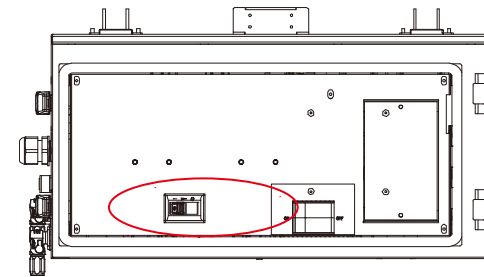
**Step 8** As shown in Figure 30, the grounding position of the HV50056 and the inverter.



**Figure 33 DIP Switch Definition**

**Step 9** DIP switch defines the ID address of each battery in one cluster. Set the DIP switch of the nearest battery from the HV50056 to the farthest battery in sequence of 1 to N. N is the number of the batteries, which is min. 4 and max. 8.

**NOTE:** There should be no same ID number in one cluster.



**Figure 34 Turning on the Switch**

**Step 10** After wiring, please open the front cover of HV50056 and turn on the molded case circuit breaker.

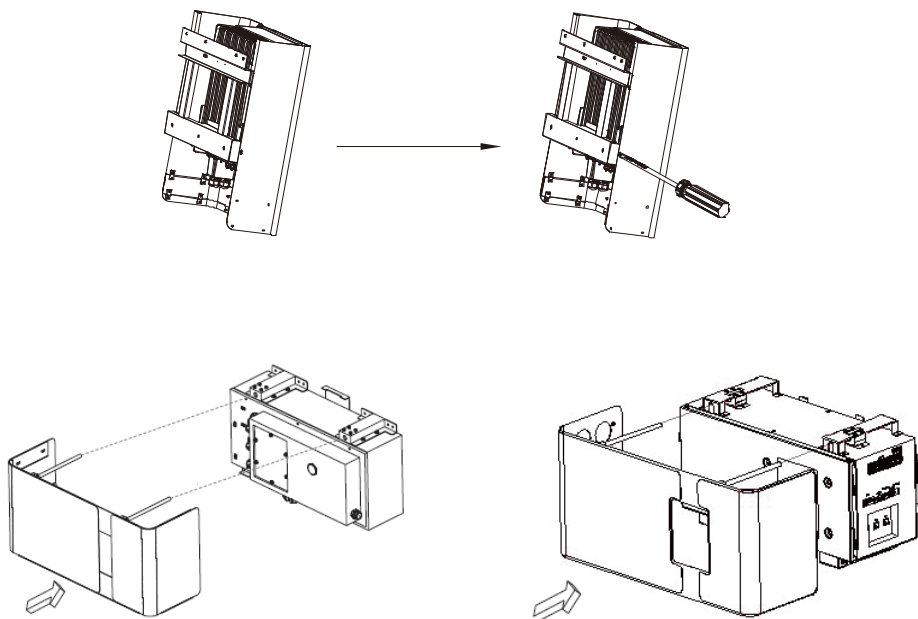


Figure 35 Installation of the front panels

## 2.4 Power Meter

The power meter should be installed and connected in the distribution box. There are two kinds of power meters, ADL-3000 and ACR10R, which users can choose from.

★ADL-3000: three-phase meter (with or without CT)

★ACR10R: three-phase meter with CT

### 2.4.1 Meter ADL-3000 (If Applicable)

#### 2.4.1.1 ADL-3000 (without CT, without meter plug), if applicable:

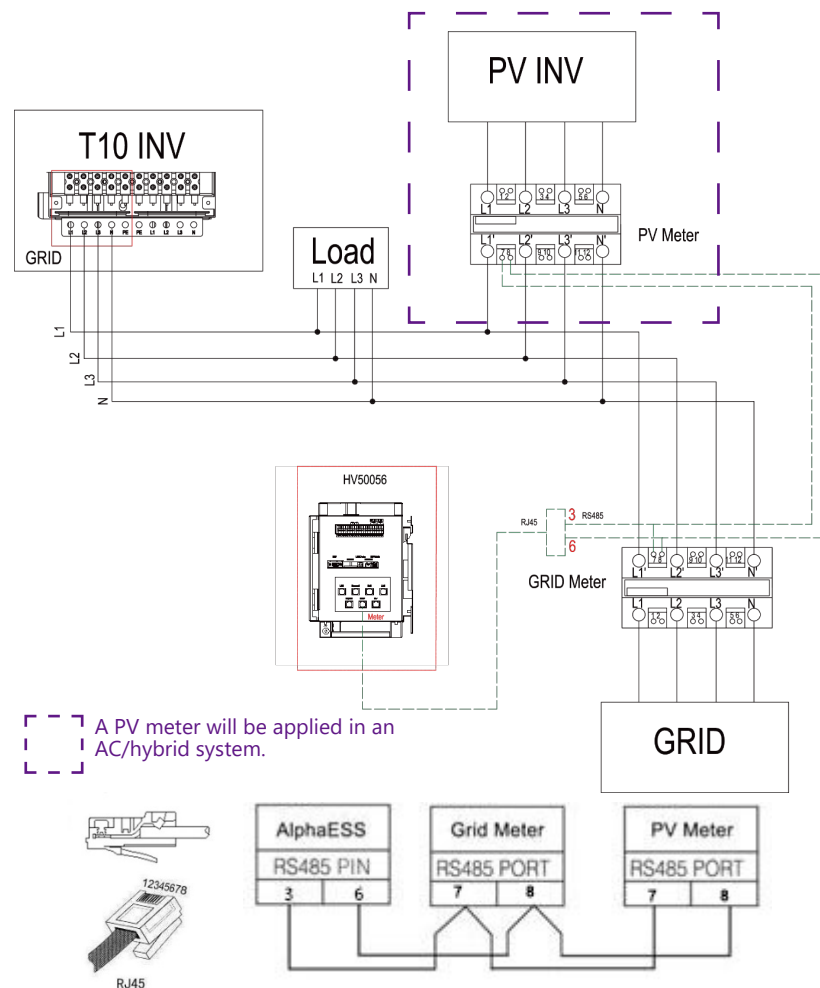


Figure 37 ADL-3000 Connection (without CT, without Meter Plug)

**Note:** Meter 7, 8 connect the RJ45 3, 6, then RJ45 connect the Meter port on the control box.

### 2.4.1.2 ADL-3000 (without CT, with meter plug), if applicable:

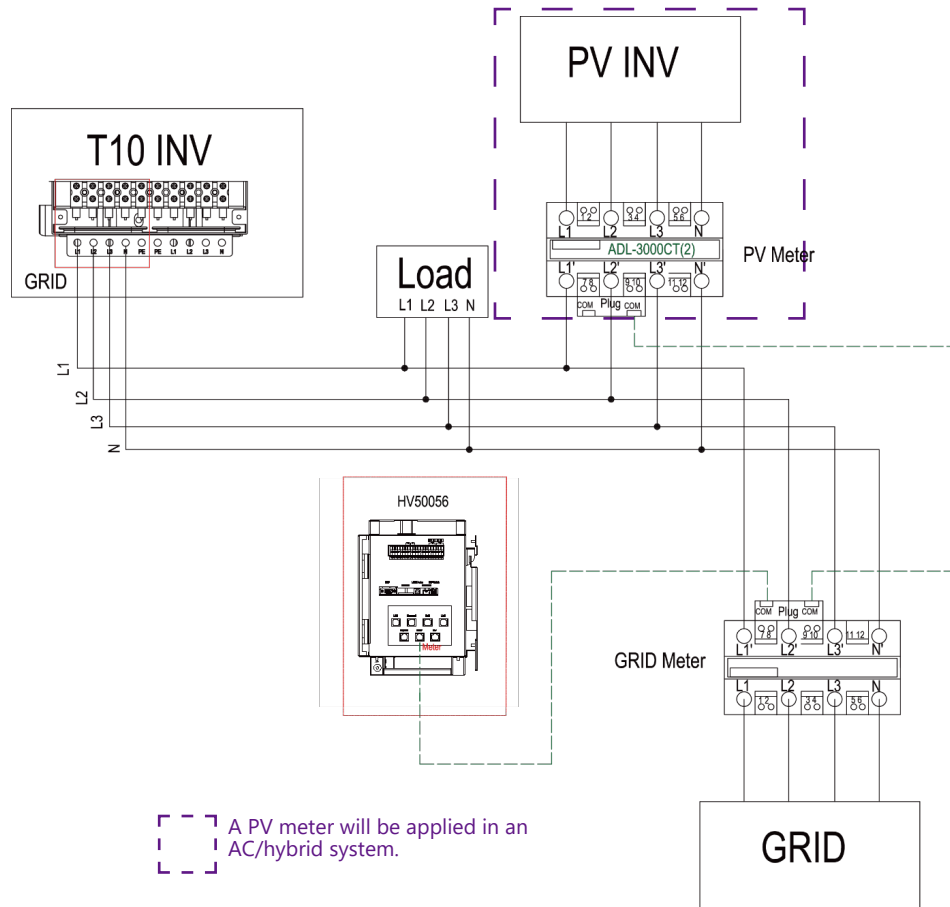


Figure 38 ADL-3000 Connection (without CT, with Meter Plug)

### 2.4.1.3 ADL-3000 (with CT, without meter plug), if applicable:

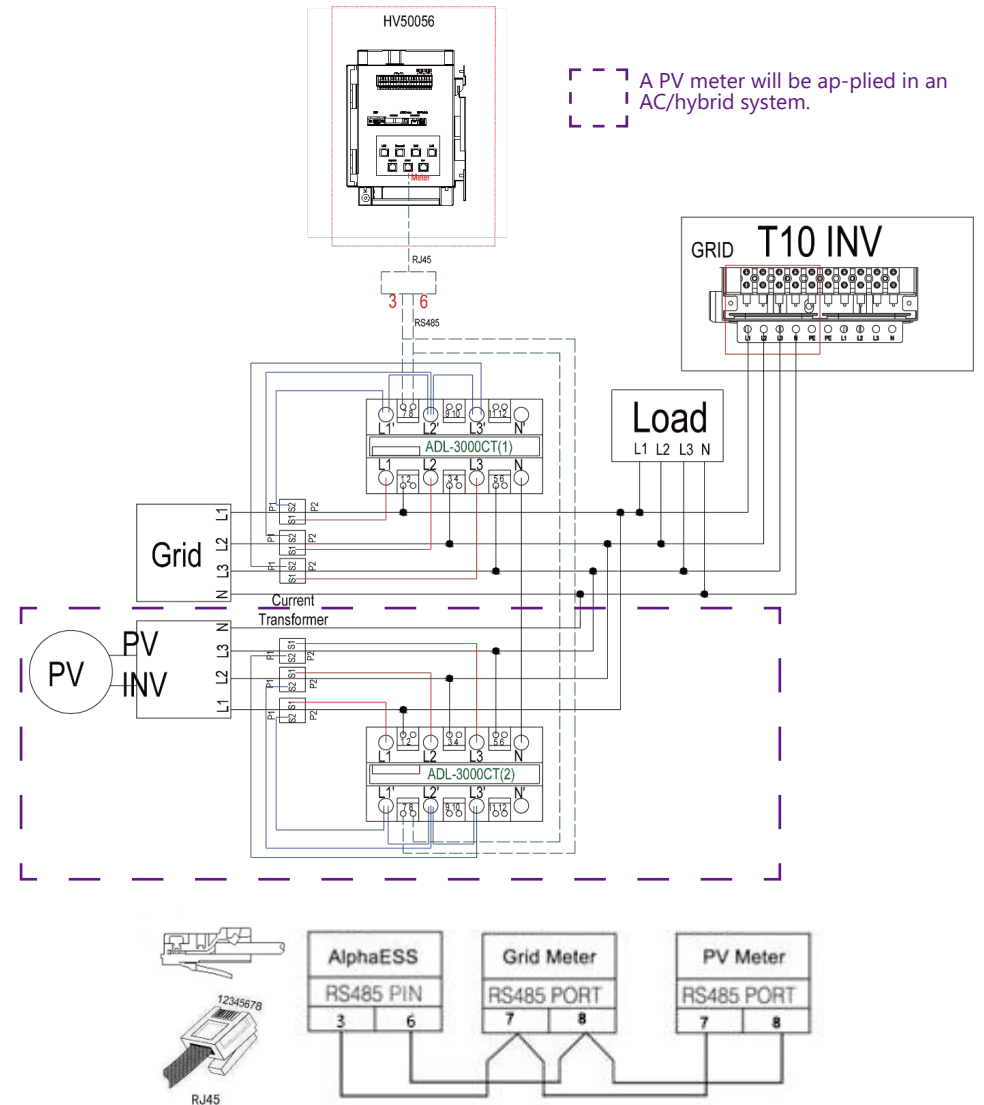


Figure 39 ADL-3000 Connection (with CT, without Meter Plug)

**!** Note: When connecting CTs, pay attention to the current direction. P1 should be nearest to the grid or the PV-inverter.



### 2.4.1.4 ADL-3000 (with CT, with meter plug), if applicable:

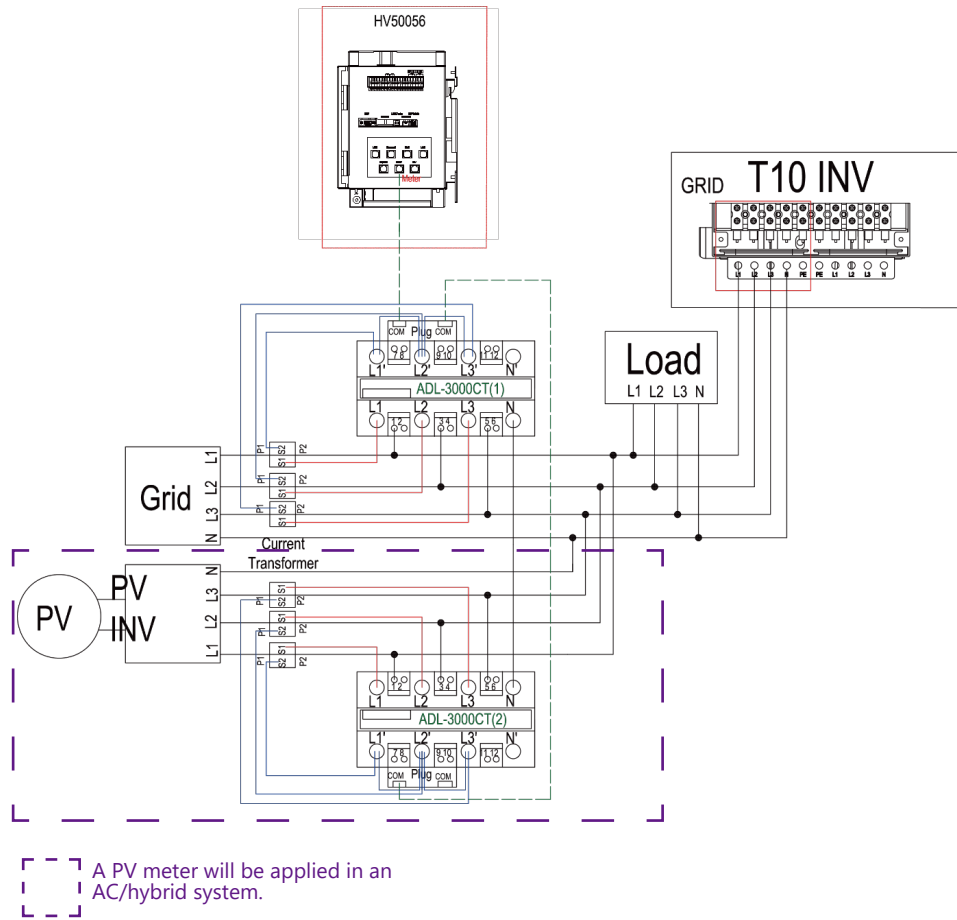


Figure 40 ADL-3000 Connection (with CT, with Meter Plug)

**!** Note: When connecting CTs, pay attention to the current direction. P1 should be nearest to the grid or the PV-inverter.

### 2.4.2 ACR10R Meter (If Applicable)

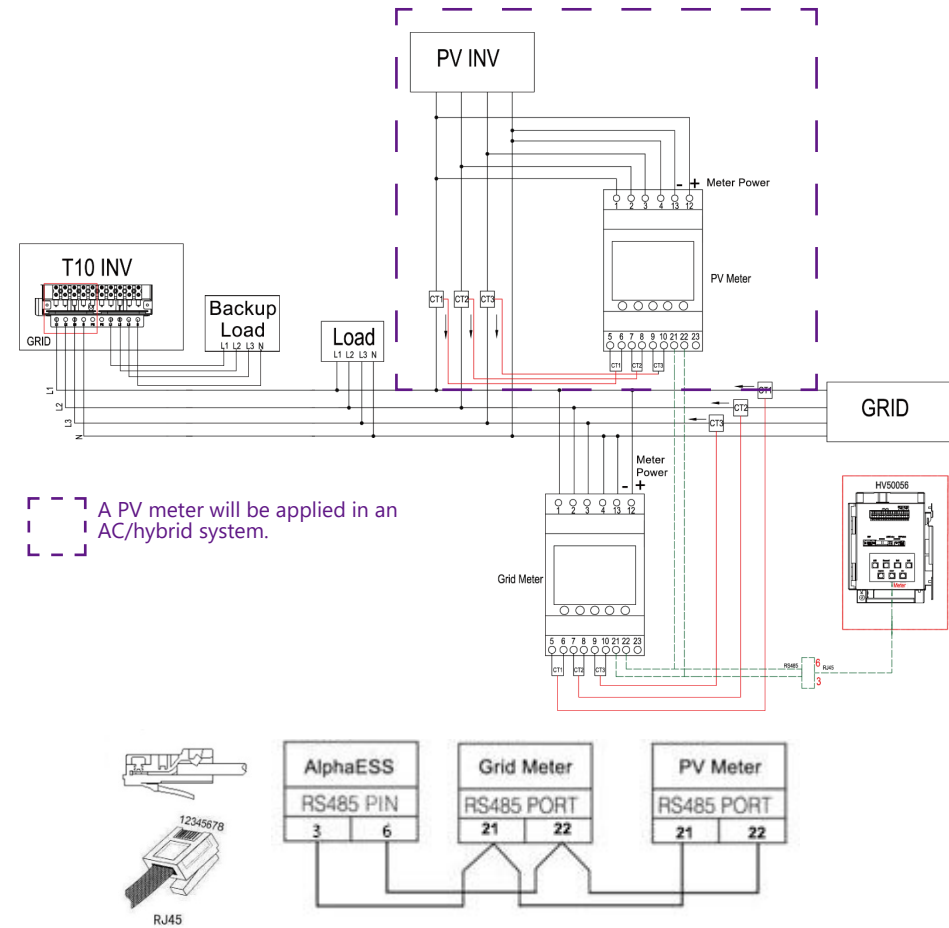


Figure 41 ACR10R with CT Connection (without Meter Plug)

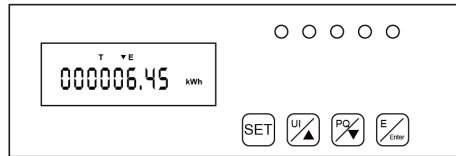
**!** Note: When connecting CTs, pay attention to CT arrow directions, please refer to Figure 41.



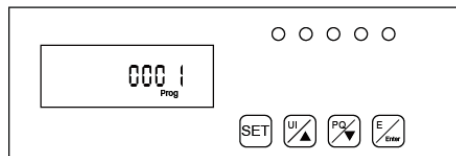
## 2.4.3 Meter Setting

### 2.4.3.1 ADL3000

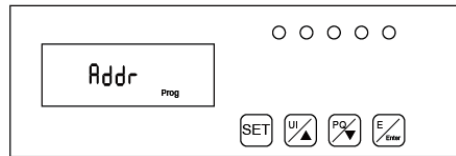
**Step 1** The initial interface of the meter (normal working interface) is as shown below:



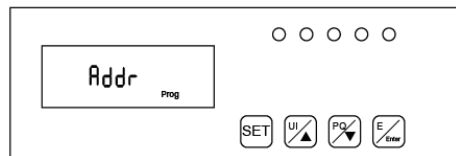
**Step 3** Click the "Enter" button to enter the following interface and press the up and down arrow keys to enter the password 0001;



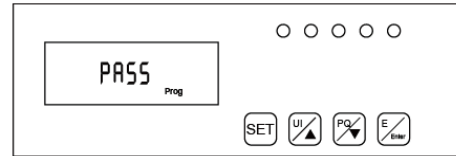
**Step 5** Click the "Enter" button again to enter the address interface:



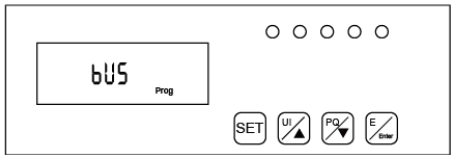
**Step 7** Click the "Enter" button and the address setting is completed.



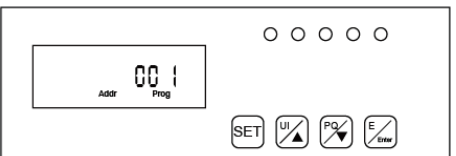
**Step 2** Click the "SET" button to enter the password interface:



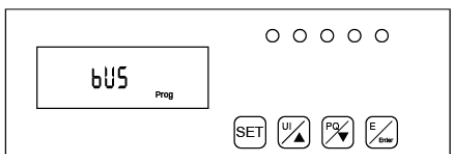
**Step 4** Click the "Enter" button and the password input is completed.



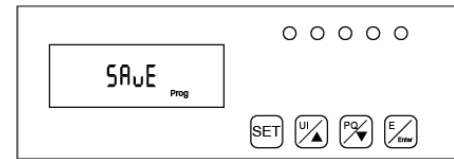
**Step 6** Click the "Enter" button to enter the following interface, press the up and down arrow keys to set the meter address, the Grid meter (DC, AC and Hybrid system) address is set to 001, and the PV meter (AC and Hybrid system) address is set to 002.



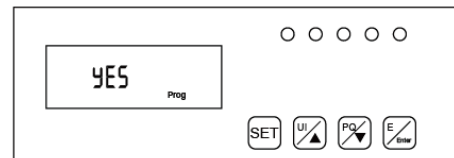
**Step 8** Click the "SET" button to enter the following interface:



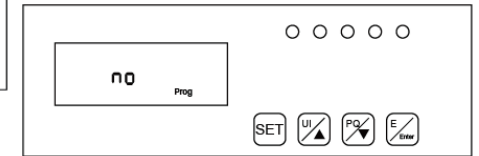
**Step 9** Click the "SET" button again to enter the save interface:



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

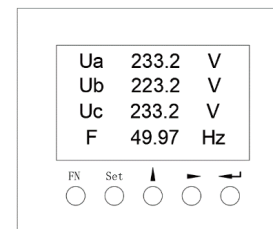


**Step 10** Click the "Enter" button to enter the following interface, press the up and down arrow keys, and set "no" to "YES" to save the configuration.

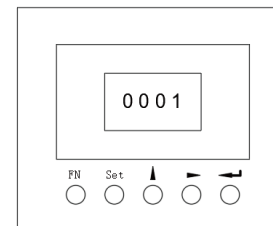


### 2.4.3.2 ACR10R

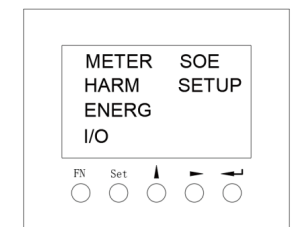
**Step 1** This is the initial interface of the meter, click the "Set" button;



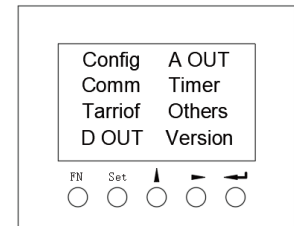
**Step 3** On the password input interface, the code is "0001", confirm to enter the setting interface;



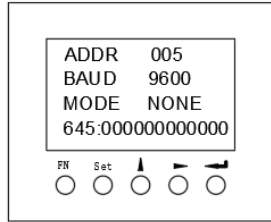
**Step 2** Click the "SETUP" button;



**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;



### 03 SYSTEM OPERATION

#### 3.1 Switch On

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

**Step 1** Turn on the MCCB and the AC switch of HV50056 shows.

**Step 2** Turn on the external On-grid AC breaker

**Step 3** Turn on the PV switch (DE: PV switch on inverter; AU: external PV switch)

**Step 4** If backup load is applied, turn on the external Backup AC breaker

#### 3.2 Switch Off

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

**Step 1** Remove the front panel of the inverter and HV50056

**Step 2** If backup load is applied, turn off the Backup AC breaker.

**Step 3** Turn off the MCCB of HV50056 and the ac switch on HV50056

**Step 4** Turn off the PV switch (DE: PV switch on inverter; AU: external PV switch)

**Step 5** Turn off the On-grid AC breaker.

### 04 EMS INTRODUCTION AND SET UP

#### 4.1 Function Description

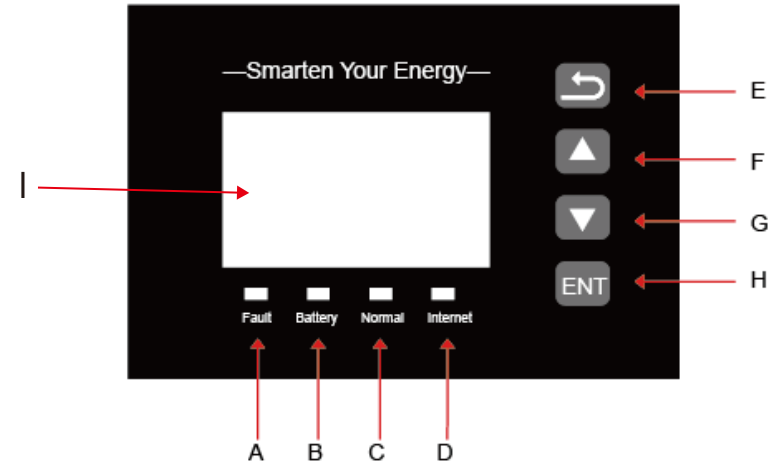


Figure 42 SMILE-T10 EMS Interface

Item	Name	Status	Description
A	Fault	<div><div></div></div>	ON: Fault OFF: No Fault
B	Battery	<div><div></div></div>	ON: Battery communication is OK OFF: Battery communication is lost
C	Normal	<div><div></div></div>	ON: System works normally OFF: System is abnormal or warning
D	Internet	<div><div></div></div>	ON: System is communicating with server OFF: System is not communicating with server

Object	Name	Description
E	Button Function	Return Button: Escape from current interface or function
F		Up button: Move cursor to upside or increase value.
G		Down Button: Move cursor to downside or decrease value.
H		ENT Button: Confirm the selection.
I	LCD Screen	Display the information of the inverter in this LCD screen.

## 4.2 Setting

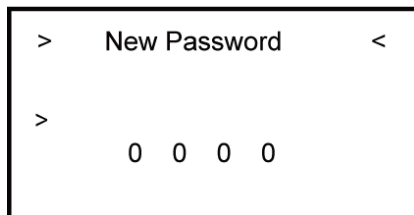


Figure 43 Password Interface

**Step 1** Click setting and enter the password.  
The installation's password is four-digit password: 1111, after the password is correctly entered, you shall be at the main Setting interface (administrator permissions).

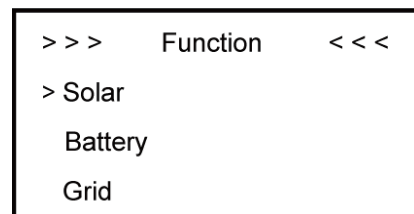


Figure 45 Function Interface

**Step 3** Click Solar to set the Solar relevant information.

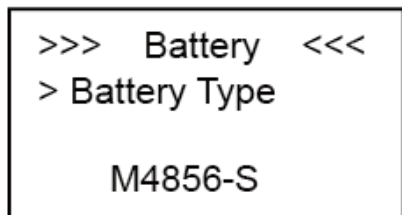


Figure 47 Battery Model Interface

**Step 5** Click the Battery Function and check battery type M4856-S.

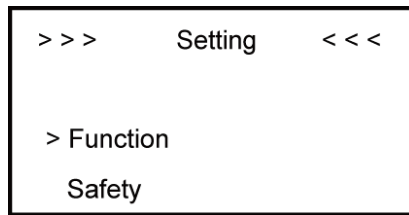


Figure 44 Setting Menu

**Step 2** Click Function to enter function setting.

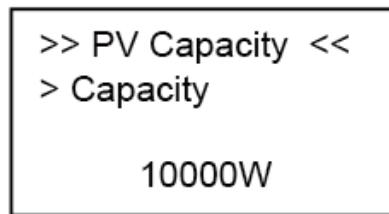


Figure 46 Solar Setting Interface

**Step 4** Set PV capacity, the total capacity of PV capacity of T10-INV and PV inverter (if it is installed).

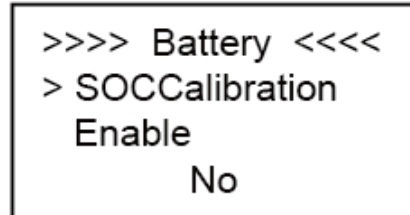


Figure 48 SOC Calibration Interface

**Step 6** Check SOC Calibration function set No.

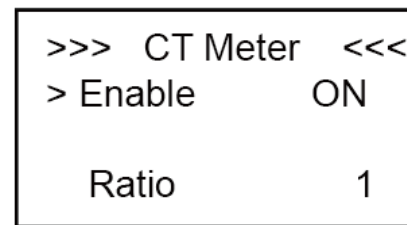


Figure 49 CT Meter Option Interface

**Step 7** Choose CT Meter. If you use CT, please enter the relevant CT ratio. If you don't use CT, please enter the ratio as 1.



Figure 50 Grid Setting Interface

**Step 8** Click the Grid Function to set up relevant parameters about the grid.

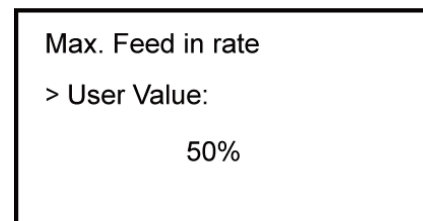


Figure 51 Max. Feed in rate Setting Interface

**Step 9** Set the Max. Feed in rate value.

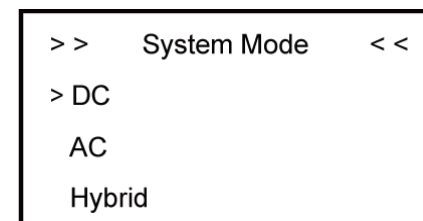


Figure 52 System Mode Setting Interface

**Step 10** Click Function-System Mode to set system mode: DC, AC, Hybrid.

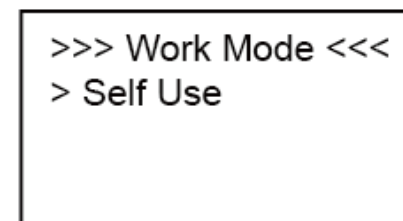


Figure 53 Work Mode Setting Interface

**Step 11** Click the mode then set up work mode.(self-use or force time charge)

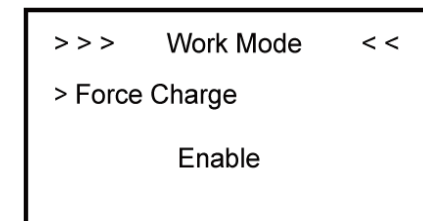


Figure 54 Force Charge Setting Interface

**Step 12** If you want to use force charge, set Enable here.

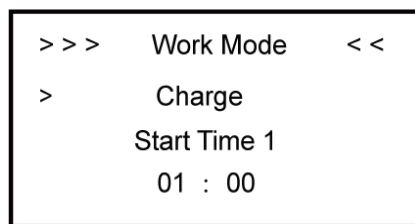


Figure 55 Force Charge Start Time Setting

**Step 13** Set the charge start time

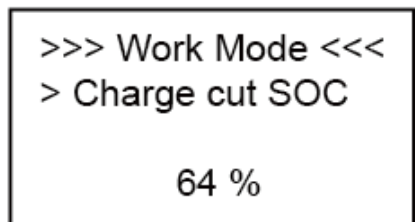


Figure 57 Charging cut SOC Setting

**Step 15** Set the charging cut-off SOC.

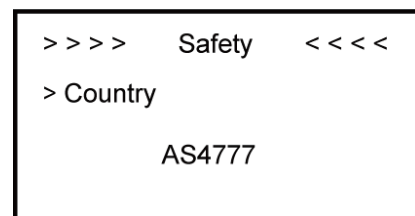


Figure 59 Safety Setting Interface

**Step 17** Click Safety in the setting menu. Set safety standard. ARN4105 for Germany, CEI0\_21 for Italy, G83\_2 for Great Britain, AS4777 for Australia

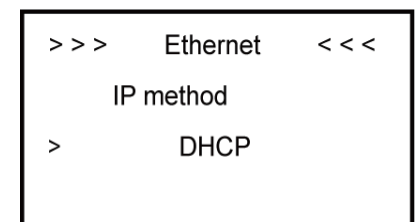


Figure 61 Ethernet interface

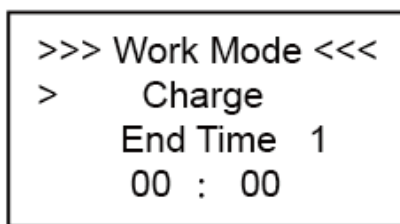


Figure 56 Force Charge End Time Setting

**Step 14** Set the charging start time

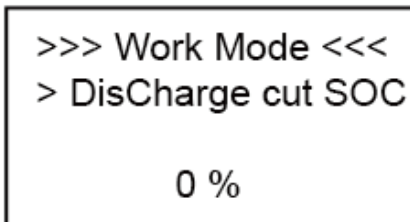


Figure 58 Discharging cut SOC Setting

**Step 16** Set the discharging cut-off SOC.

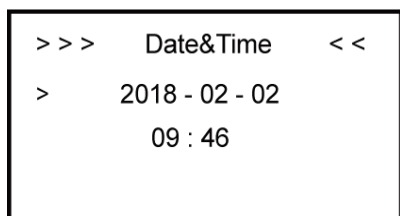


Figure 60 Date&amp;Time Setting Interface

**Step 18** Click System in the setting menu. Click Date & Time and set up the date and time.

**Step 19** Click Ethernet to set the IP address. DHCP mode means that setup IP address is set up automatically. If you want to set up the IP address manually, please choose manual mode.

**Note:** It is needed to set the following 3 parameters for manual mode:  
 IP Address: IP address;  
 Subnet Mask: Subnet mask;  
 Default Gateway: Default gateway;  
 Automatic display one parameter:  
 MAC Address: display MAC Address.

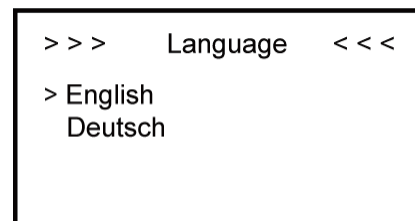


Figure 62 Date&amp;Time Setting Interface

**Step 20** Click Language to set language

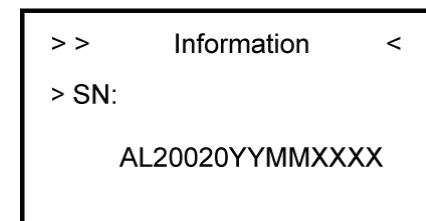


Figure 63 Date&amp;Time Setting Interface

**Step 21** Make sure all the following number is correct.

### 4.3 EMS Communication Checking

After wiring and EMS setting, check that the status indicators are normal. Then enter MENU->Status->Communication to check that the communication status of all the devices are normal.

AC\HYBRID system:

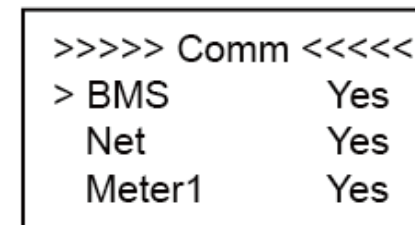


Figure 64 BMS

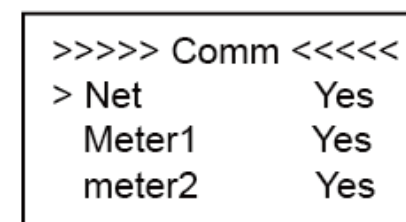


Figure 65 Ethernet and Meter

DC system:

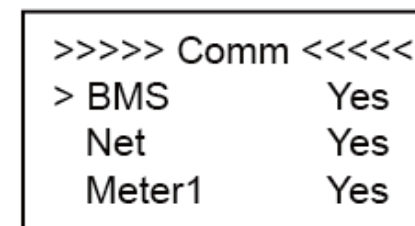


Figure 66 BMS

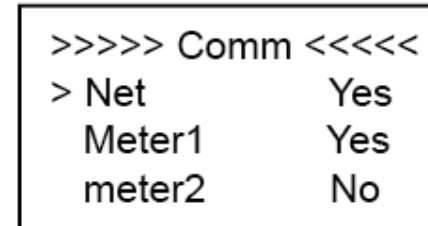


Figure 67 Ethernet and Meter

In an AC/Hybrid mode, the Meter 2 status shows YES, which means normal. In a DC mode, the Meter 2 status shows YES, which means normal. Then EMS can work normally.

#### 4.4 Assembling of the Front Panels

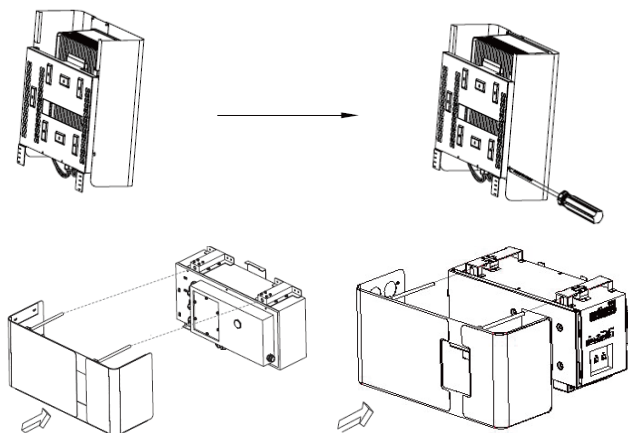


Figure 68 Assembling of the Front Panels

**Step 1 Inverter part:** please unscrew the screws of Bracket A and hang the front panel of the inverter onto Bracket B. Fix the front panel to Bracket B with screws.

**Battery and control box:** Push the top two guide rods into the housing and press the buckle from the bottom right in the middle.

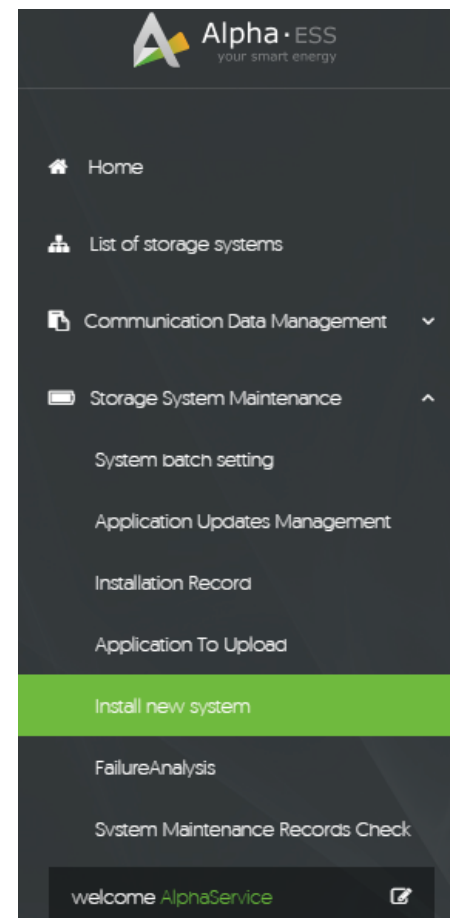


**Note:** please assemble the front panel of the inverter at first, then HV50056 and the batteries.

## 05

## 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-T10 can be also 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 enter 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 Other Information

**Step 3** Finally, select the "Other Information" submenu and set the following parameter:

- ACDC mode: it should be set
- Time zone
- max. feed-in rate: In some countries you must set the max. feed-in rate in % according to the relevant regulation.

Other Information

System Mode  Allow automatic updates  Update Config Time  ACDC

Max. Feed in Rate  Meter Phase  EMS Set Function Mode  BackupBox SN

SuperCableBox SN  Power source  Ems language

Time zone  Firmware version number  Allow Sync Time

Data upload frequency

## 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](http://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.

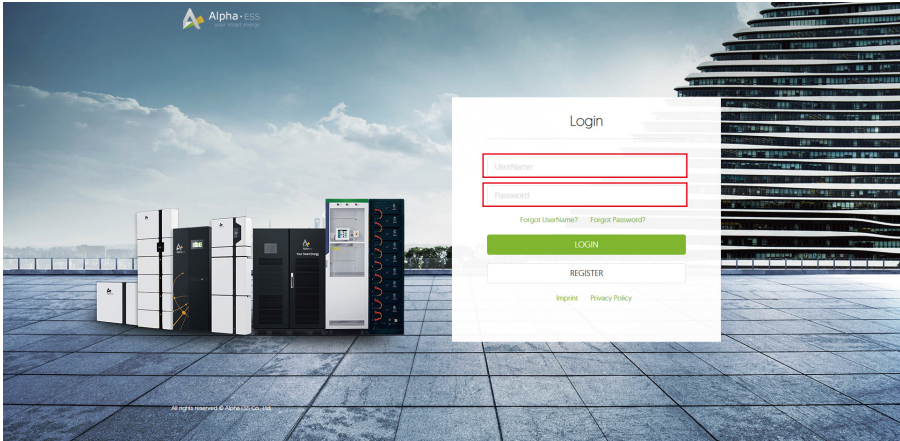


Figure 6.1 Monitoring Login Interface

Register

User Type

S/N

End user

Username

Password

Confirm Password

Country/Area

Province/State

City/Town

Address

Zip Code

Language

Contact name

Contact Number

E-mail

Time zone

(UTC+08:00) Ulaanbaatar

☒ Auto upgrade enabled (The automatic upgrade function is to actively update the latest push program to improve the performance of the device when the system is running on the network.)

☐ Agree to the above terms<<Terms and Conditions>>

SIGN UP NOW

Back

In this form, all fields with a red star are compulsory, and you can select the end 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

07 ANNEX

7.1 Datasheet – AlphaESS Storion-SMILE-T10

STORION

SMILE-T10

Alpha-ESS

Model		Storion-SMILE-T10	
System Specification			
Nominal Output Power		10 000 VA	
Max. DC Input Power		13 000 W*	12 000 W**
Capacity Range		11.5 kWh ~ 23.0 kWh (90% DoD)	
Battery Chemistry		LFP (LiFePO4)	
IP Protection		IP21 (Indoor) / IP65 (Outdoor)	
Warranty		5 Year Product Warranty, 10 Year Performance Warranty	
Inverter Technical Specification			
Model	SMILE-T10-INV	Max. AC Output Current	16.5 A
Max. PV Input Current	125/125A*	Max. AC Input Current	22.7 A
Max. PV Input Voltage	1000 V*	Output Power Factor	1 (Adjustable from 0.8 leading to 0.8 lagging)
Max. Short Current	152/152A*	Backup	UPS
MPPT Number	2	Display	LCD (in HV50056)
MPPT Voltage Range	200 ~ 850 V*	Humidity	15% ~ 85% (No Condensing)
Start-up Voltage	180 V	Dimension (W x D x H)	610 x 236 x 605 mm* 610 x 236 x 655 mm**
Max. Charging / Discharging Current	25 A	Weight	40 kg
Phase	Three-Phase	Grid Regulation	CEI 0-21, VDE4105-AR-N, EN50438, G98, G100* AS/NZS 4777.2**
Rated Voltage	400 / 380 V	Safety	IEC 62109-1&-2, IEC 62040-1
Rated Frequency	50 / 60 Hz	EMC	EN61000-6-1 / 2 / 3 / 4 EN61000-4-16 / 18 / 29
Battery Technical Specification			
Module Model		M4856-S	
Module Capacity		2.9 kWh	
Module Nominal Voltage		51.2 V	
Operating Temperature Range		-10 °C ~ 50 °C***	
Module Weight		42 kg	
Module Dimension (W x D x H)		610 x 236 x 303 mm	
Cycle Life		≥ 6000	
Max. Charging/Discharging Current		56 A (1C)	
High Voltage Control Box Technical Specification			
BMU Model		HV50056	
DC Voltage Range		179 ~ 465 V	
Nominal Output Current		56 A	
Battery Modules Connection		4 ~ 8 M4856-S in series	

except Australia and New Zealand

only for Australia and New Zealand

\*\*\*When the temperature is below 0 °C or above 40 °C, the performance will be limited.

CE

IEC