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your smart energy

V02.05292019

INSTALLATIONMANUAL ENERGYSTORAGESYSTEM(ESS) **STORION-SMILE-T10** (INDOOR)

Version Information

Version	Date	Content
V01	20012019	New
V02	20190529	Replaced some pictures

CONTENTS

01 INTRODUCTION

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:

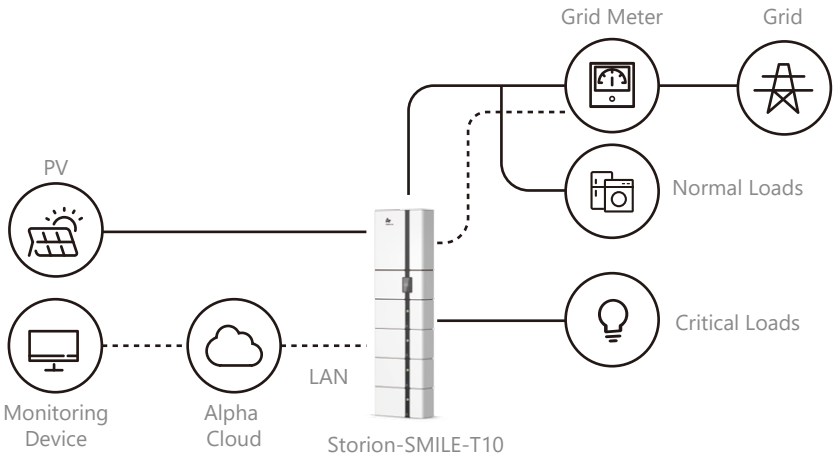


Figure 1 DC-coupled Storage System – Scheme

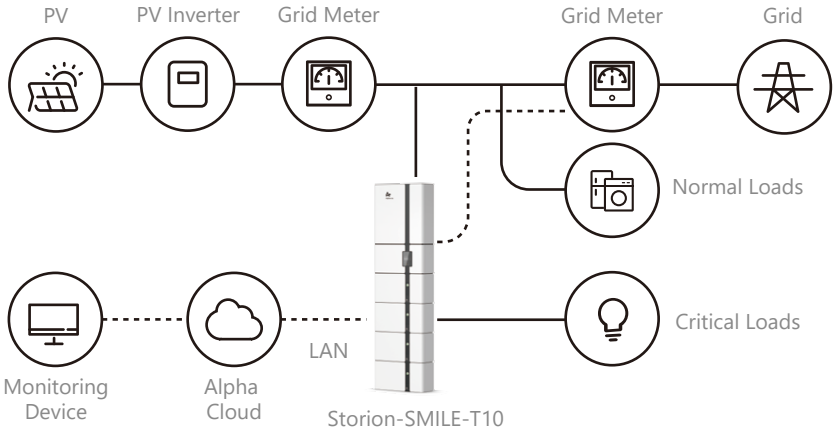


Figure 2 AC-coupled Storage System – Scheme

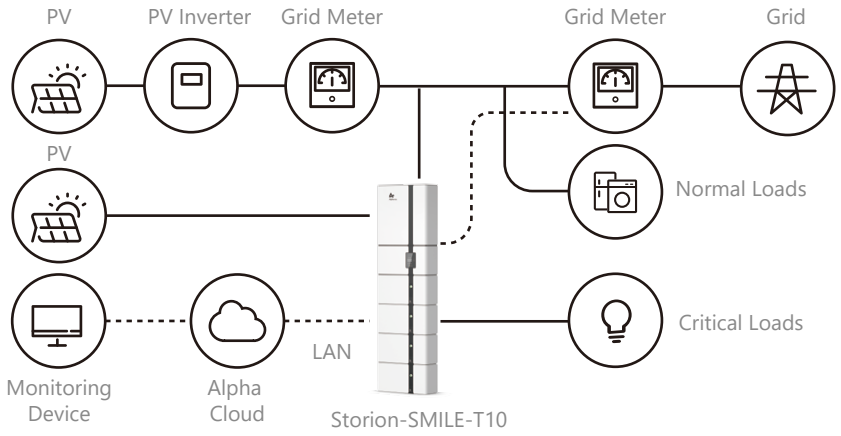


Figure 3 Hybrid-coupled Storage System – Scheme

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 10kWp capacity of PV is installed. The meters of the grid company must be also installed in the system as the following figure shows.

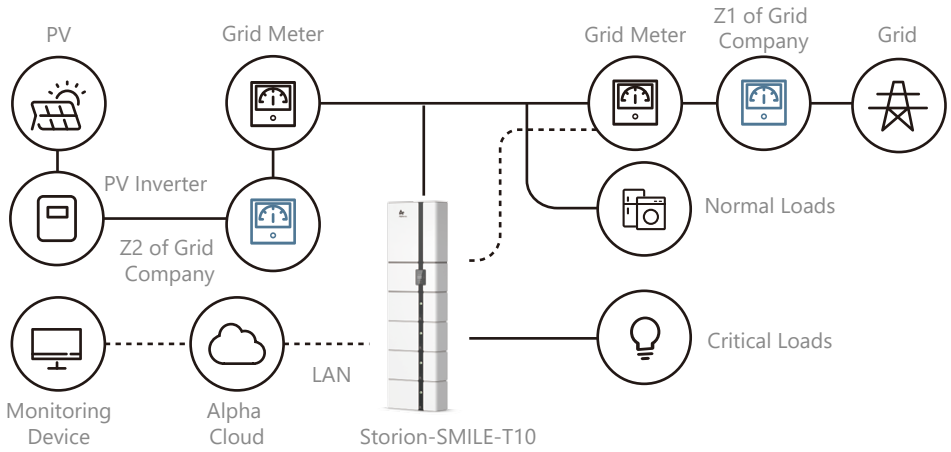


Figure 4 AC-coupled Storage System – Scheme, Germany >10 kWp

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

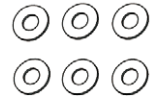
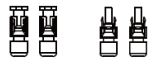
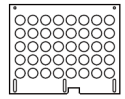
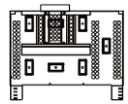
Risk of chemical burns from electrolyte or toxic gases.
During standard operation, no electrolyte shall leak from the battery pack and no toxic gases shall form. Despite careful construction, if the Battery Pack is damaged or a fault occurs, it is possible that electrolyte may be leaked or toxic gases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

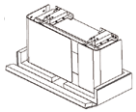
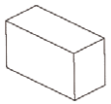
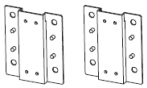
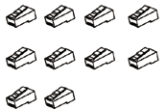
CAUTION:

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:

				
T10-INV box (X1)	Communication cable (X1)	Screw package: Expansion tube (X6) Expansion screw (X6)	DC power cables: Positive-Negative power line (X1)	Gasket (X6)
				
AC terminal (X12)	Cable bond (X1)	Hexagon nuts with flange (X2)	Cable tie (X30)	Communication cable (X1) BAT-BAT
				
DC connectors: Positive X2, negative X2	Bracket A (X1)	Bracket B (X1)	3-phasig Meter (X1): ADL3000 or ACR10R	Installation Manual (X1)

				
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 box (X1)	RJ45 Connectors (X12)	Screw package: Expansion tube (X5) Expansion screw (X5)	Battery power cables: Positive power cable (X1) Negative power cable (X1)	Gasket (X5)
				
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

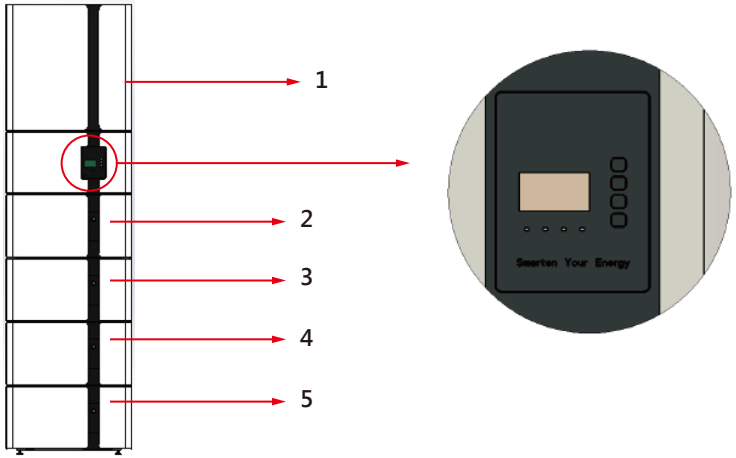
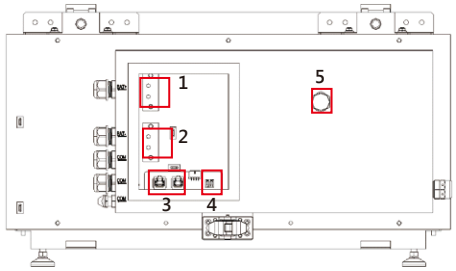


Figure 5 Storion-SMILE-T10 Delivery Scope

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



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 1sec	Red light blinks for 1sec	Red and green lights blink for 1sec

1.4.2 HV50056

1.4.2.1 Specifications

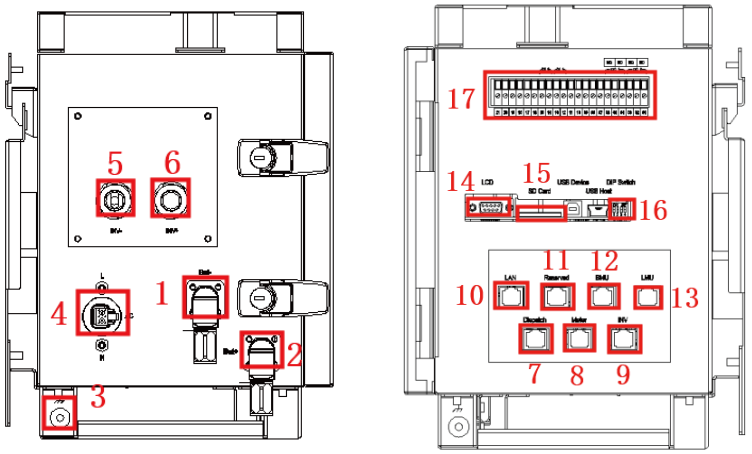


Figure 7 High-voltage Control Box – Left & Right View

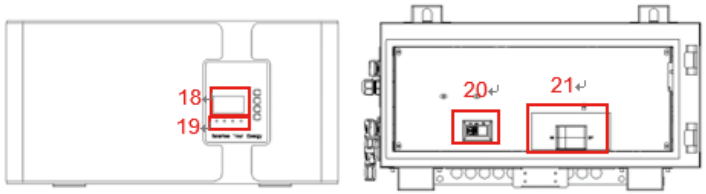


Figure 8 High-voltage Control Box – Front View, Inside –Front View

No.	Description	No.	Description
1	BAT in-	12	BMS Com Port
2	BAT in+	13	LMU Com Port
3	Earthing Point X 2 (Required To Connect With Grounding Copper)	14	External LCD Wiring Port
4	AC Auxiliary Input	15	SD Card
5	INV-	16	EMS DIP Switch
6	INV+	17	Dry Contact
7	EMS Dispatch Port	18	LCD Screen
8	EMS Meter Communication Port	19	LED Indicator
9	INV COM Port	20	Molded Case Circuit Breaker (MCCB)
10	LAN COM Port	21	AC Switch (For AC Auxiliary Input)
11	COM Port for Cascading		

1.4.3 Inverter Cable Box

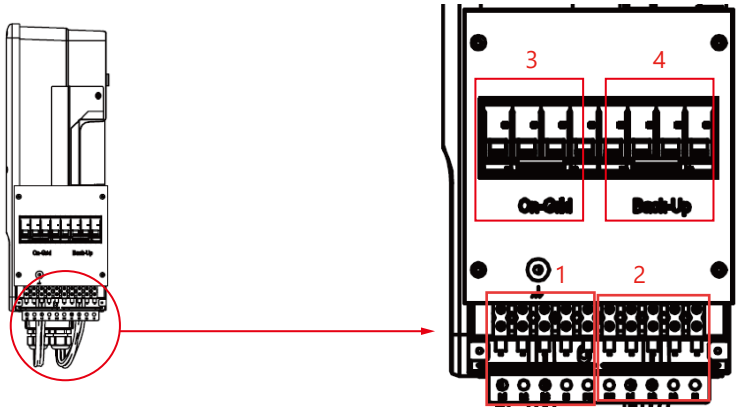


Figure 9 Inverter Cable Box

Object	Description
1	On-Grid Wiring Ports (L1, L2, L3, N, PE)
2	Back Up Wiring Ports (L1, L2, L3, N, PE)
3	On-Grid AC Breaker
4	Back Up AC Breaker

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/packaging 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

he 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 —

(i) 1000 mm beyond the vertical sides of the SMILE-T10;
(ii) 300 mm above the SMILE-T10; and
(iii) To the extent of the bottom of the SMILE-T10.

Please refer to Figure 10

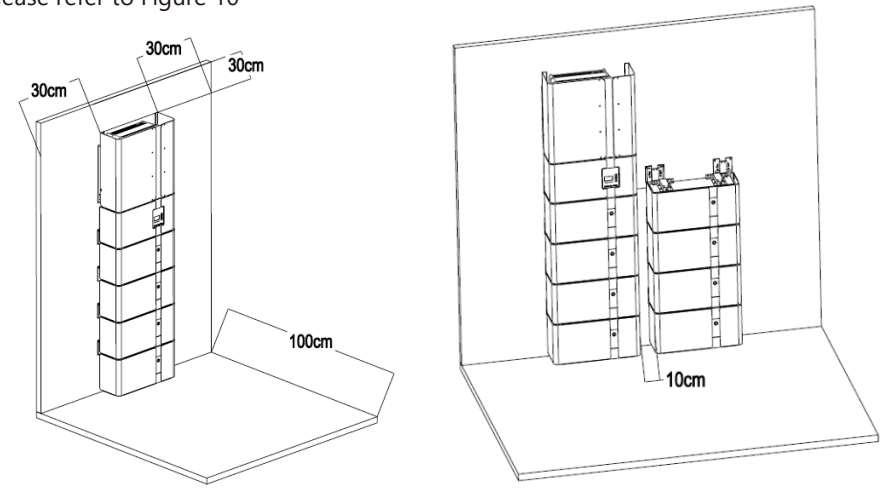


Figure 10 Distancelimit of Installation to Neighboring Objects

2.2 Installation

The top of the SMILE-T10 should be at least 300 mm from 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 by the side, distance between two rows of 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.

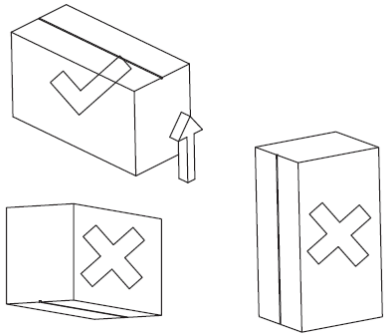


Figure 11 Unpacking the Battery

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.

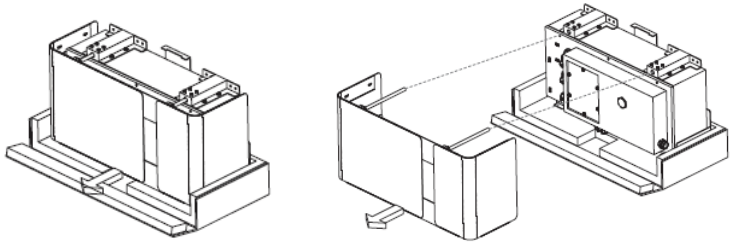


Figure 12 Removing Front Panel

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

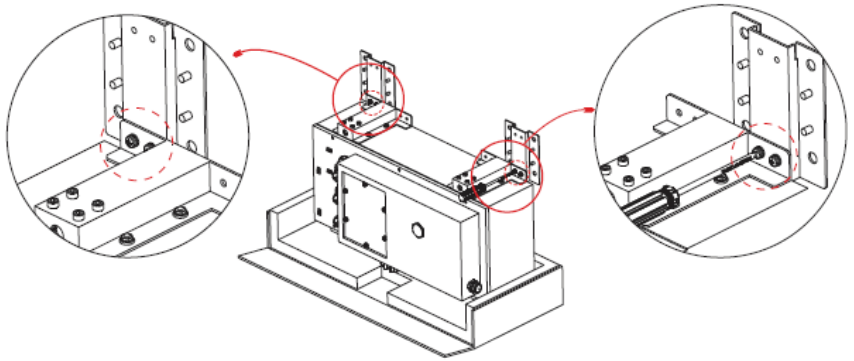


Figure 13 Assembling Battery Brackets

Step 3 Use a screwdriver to assemble the battery mounting bracket on the outside of the battery, as Figure 13 shows.

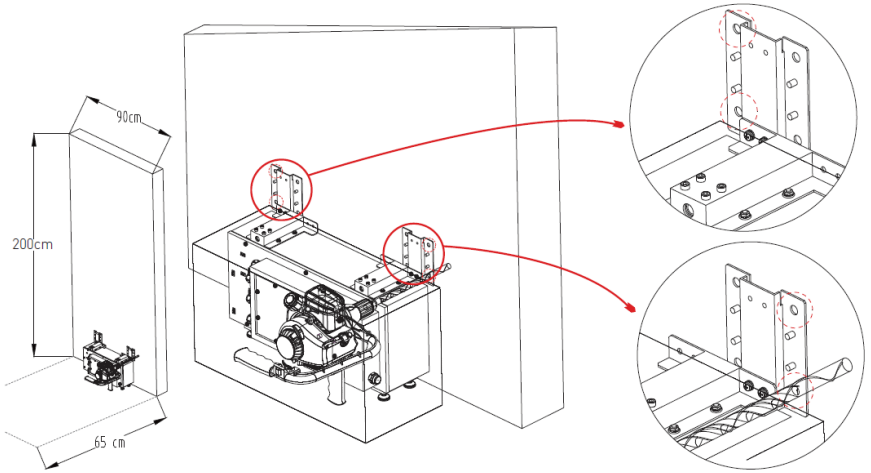


Figure 14 Placing Battery

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.
Pack 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 φ 8.0mm, length 20cm), and the depth of each hole is about 7 cm.

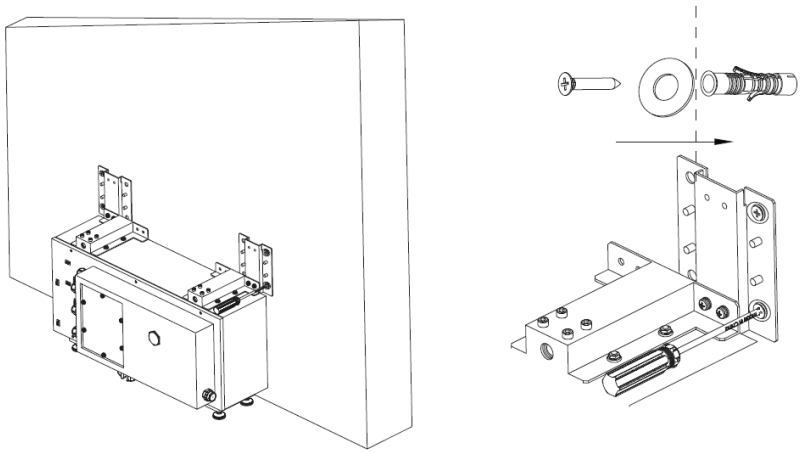


Figure 15 Mounting Battery

Step 5 Insert the expansion tube into the drilled hole. Pass the expansion screw through the gasket and lock with a screwdriver, as Figure 15 shows.

Step 6 M4856-S can be stacked with maximum of 4 batteries in each row. To install another battery repeat Steps 1~5.

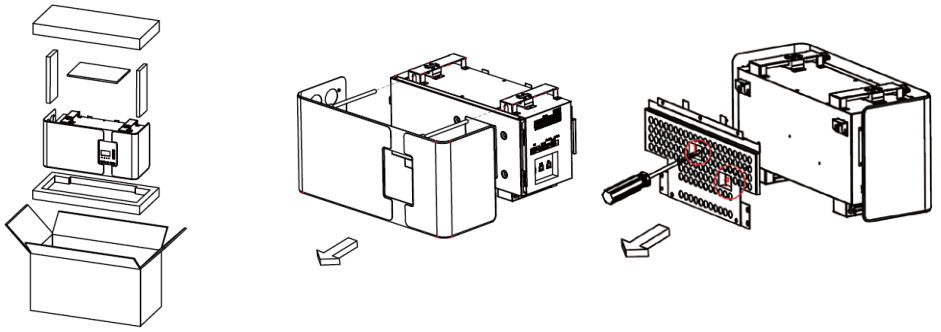


Figure 16 Unpacking the High-voltage Control Box

Step 7 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 16.

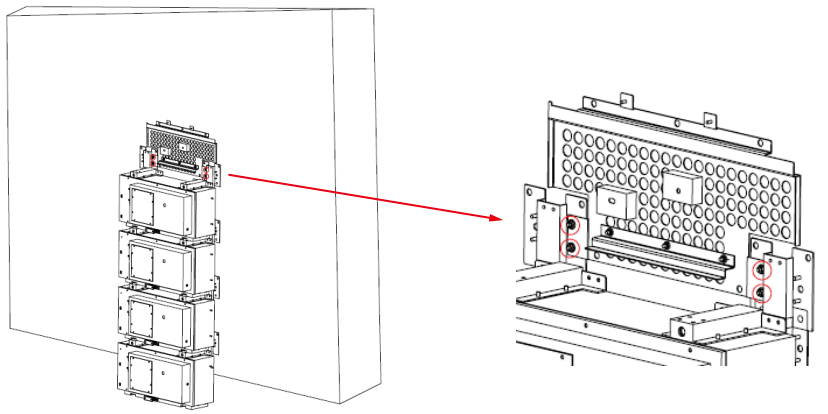


Figure 17 Placing the Rear Bracket of HV50056

Step 8 Fix the HV50056 rear bracket with flange nuts on the two bracket of the top battery, as shown in Figure 17.

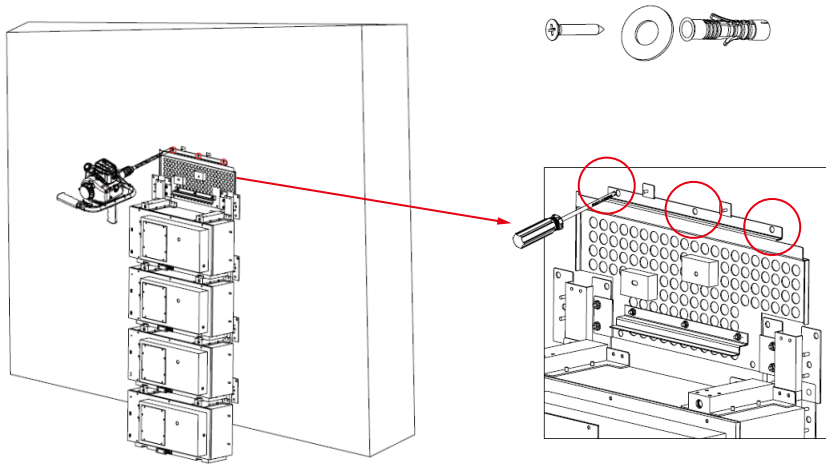


Figure 18 Installation of the Rear Bracket of HV50056

Step 9 Cover the PE bag on the top battery to block out the dust before drilling.
Please drill holes directly on the wall at the marking positions of the brackets with an impact drill (bit φ 8.0mm, length 20cm), and the depth each hole is about 7 cm.
Please insert the expansion tube into the drilled hole. Pass the tapping screw through the gasket and lock with a screwdriver, as Figure 18 shows.

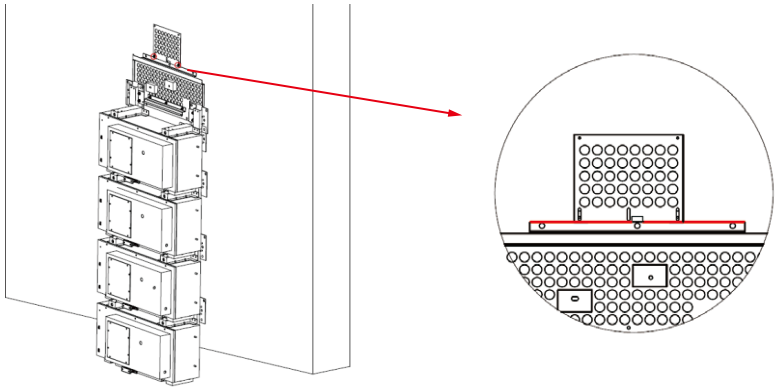


Figure 19 Installation of the Bracket A of the Inverter

Step 10 Please remove the nuts from the rear bracket of HV50056 and fix the bracket A of the inverter on the rear bracket of HV50056 with the flange nuts, as shown in Figure 19.

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

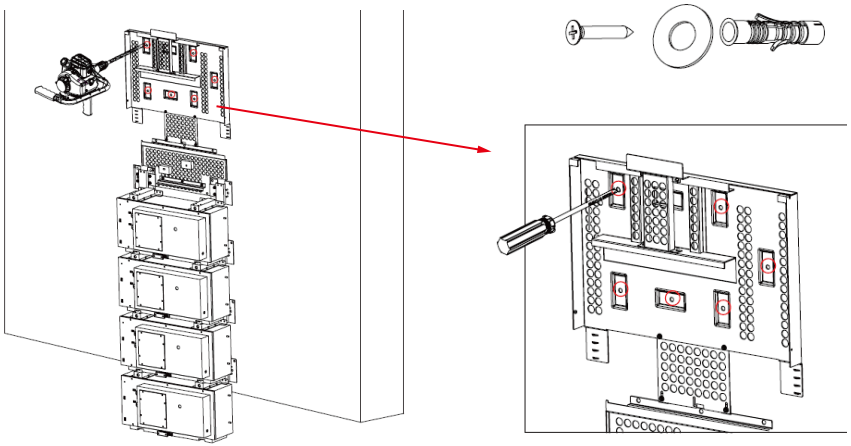


Figure 20 Installation of the Bracket B of the Inverter

Step 11 Cover the PE bag on the top battery to block out the dust before drilling.
Please drill holes directly on the wall at the marked positions of the brackets with an impact drill (bit φ 8.0mm, length 20cm), and the depth of each hole is about 7 cm.
Please insert the expansion tube into the drilled hole. Pass the tapping screw through the gasket and lock with a screwdriver, as Figure 20 shows.

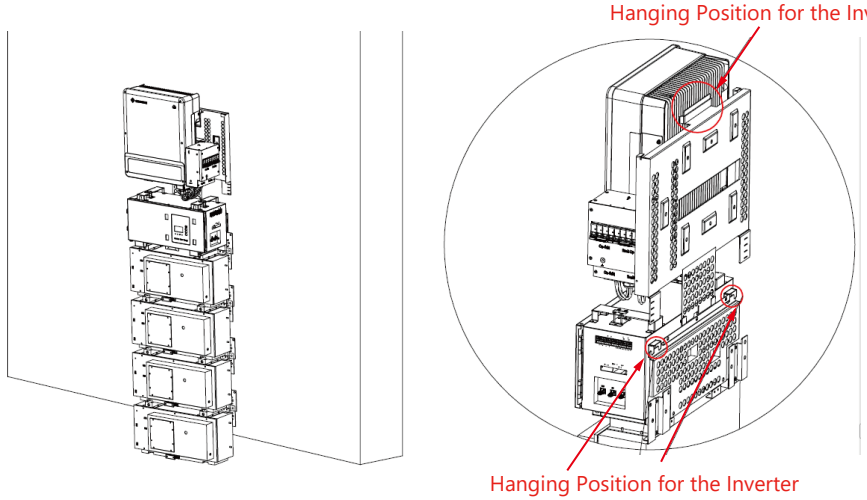


Figure 21 Installation of the HV50056 and the Inverter

Step 12 Please hang the HV50056 on the rear bracket of HV50056 and hang the SMILE-T10-INV on the bracket B of the inverter.

2.3 Wiring

Step 5 Before wiring please remove the front maintenance baffle of the batteries with an across screwdriver.

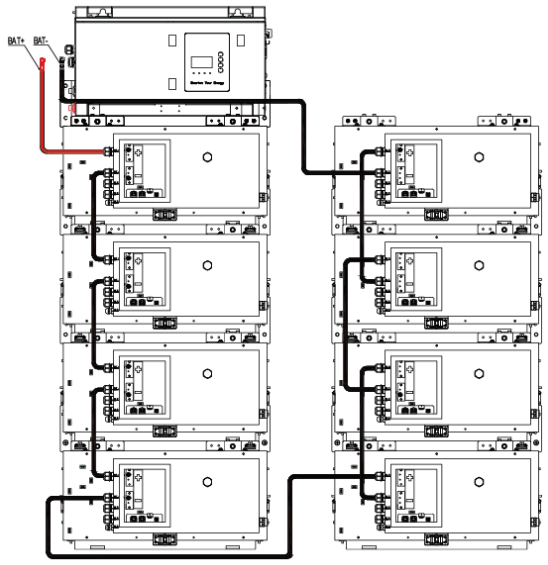


Figure 22 Connection of Power Cables on Battery Side

Step 5 Before wiring please remove the front maintenance baffle of the batteries with an across screwdriver.

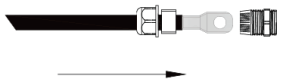


Figure 21 Installation of the HV50056 and the Inverter

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.

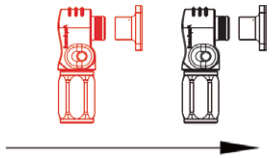


Figure 24 Power Cable Plug Connectors

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, then be 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 click sound is heard, the connection is correct.

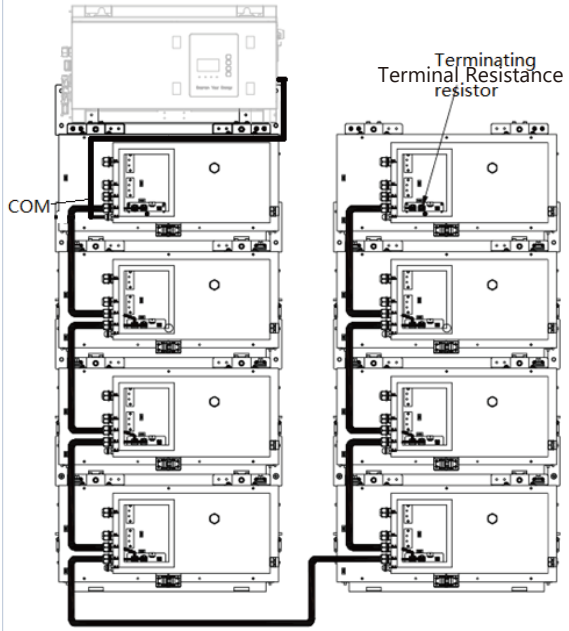


Figure 25 Connection of Communication Cables on Battery Side

Step 7 Please connect the communication cables as referred in Figure 25

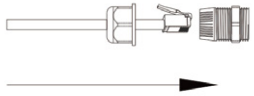
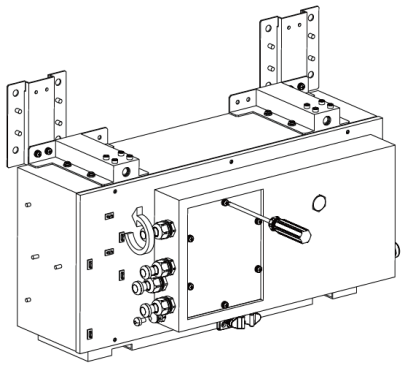


Figure 26 Communication Cables

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.

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.

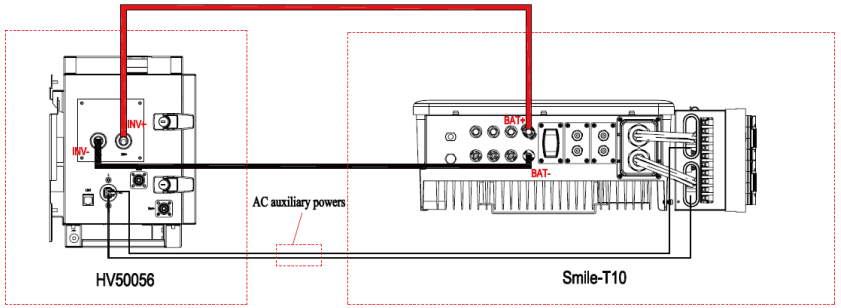


Figure 27 Connection of the Power Cables and AC Auxiliary Cable

Step 8 Please connect one DC power cable from INV+ port on HV50056 to BAT+ port on SMILE-T10-INV, and another DC power cable from INV- port on HV50056 to BAT- port on SMILE-T10-INV. The AC auxiliary power cables which have been prewired onto the inverter, shall be connected to the AC auxiliary port on HV50056, as shown in Figure 27.

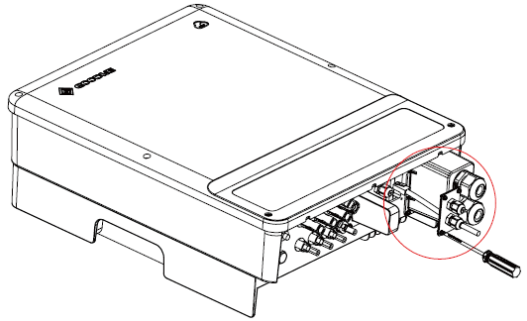


Figure 28 Connection of the Communication Cables on the Inverter Side-Removing Waterproff Baffle

Step 9 Please remove the waterproof baffle of the inverter at first as shown in Figure 28.

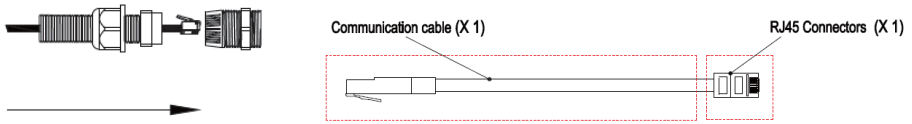


Figure 29 Connection of the Communication Cables on theInverter Side

Step 10 Please pass the cable through the waterproof cap, the sealing ring and the joint on the baffle and then connect with an RJ45 connector, see Figure 29.

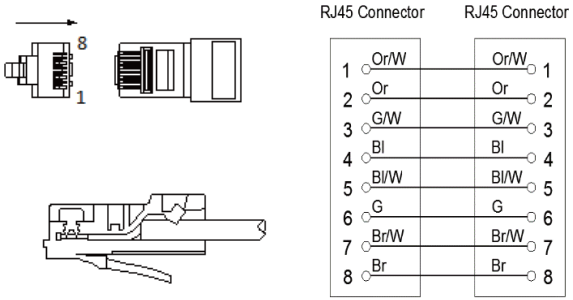
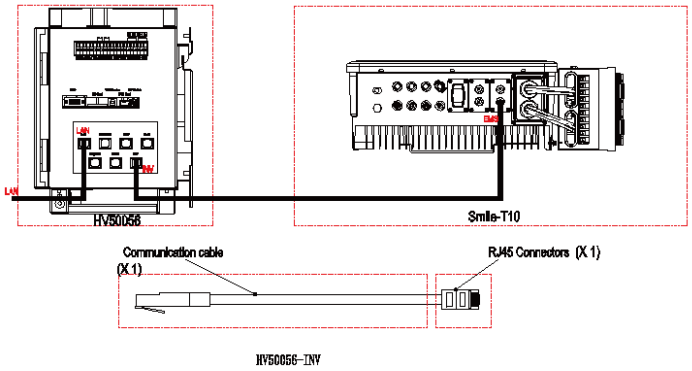


Figure 30 Network Cable Type B

NOTE: The communication cable is in type B, see Figure 30.



FFigure 31 Connection of the Communication Cables on the Inverter Side

Step 11 Connect the communication cable between INV COM port of HV50056 and EMS COM port of the Inverter, as Figure 31 shows.

Step 12 Fix the waterproof baffle back to the inverter and fix the waterproof cap.

NOTE: For indoor user, Step 18 and 20 are not needed. After removing the waterproof baffle, please connect INV COM port of HV50056 and EMS COM port of the Inverter with a regular 568B network cable.

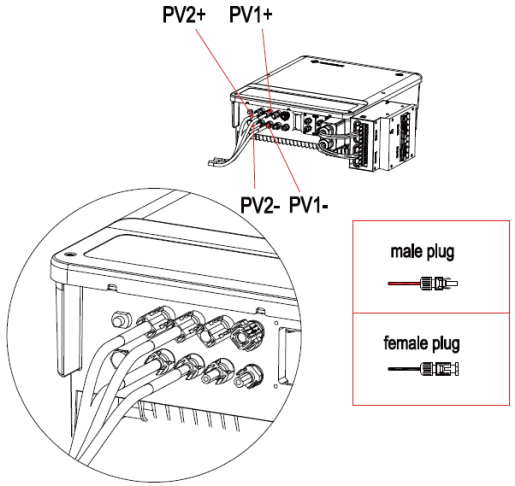


Figure 32 Connection of PV cables

Step 13 Connect the PV MC4 connector to the PV ports of the inverter.

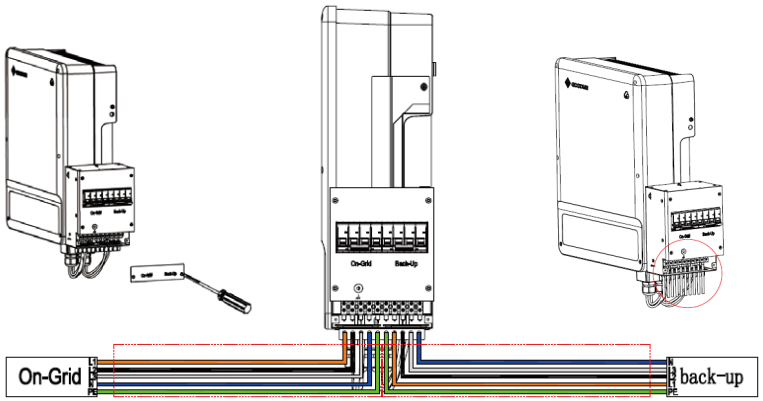


Figure 28 Connection of the Communication Cables on the Inverter Side-Removing Waterproff Baffle

Step 14 Please remove the cover of the cable box. Connect the AC cables to the corresponding ports. Fix the cover back to the cable box, as Figure 33 shows.

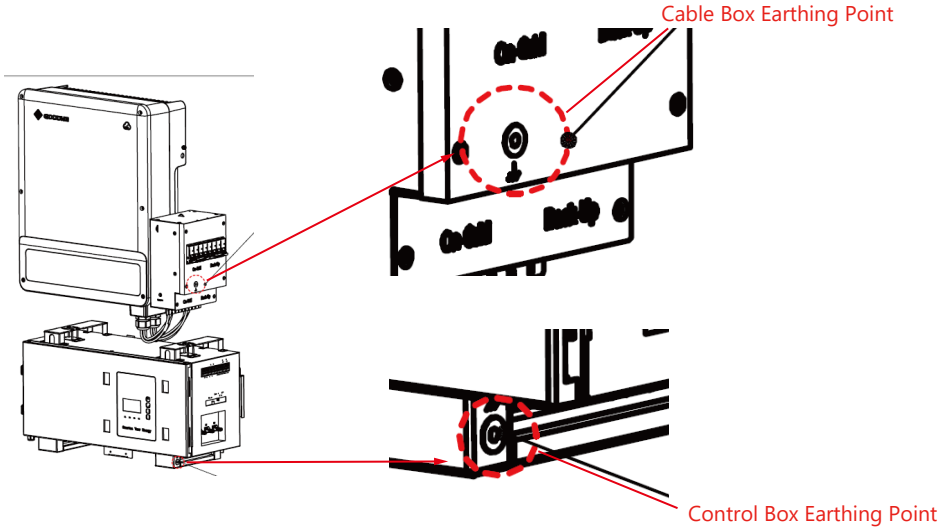
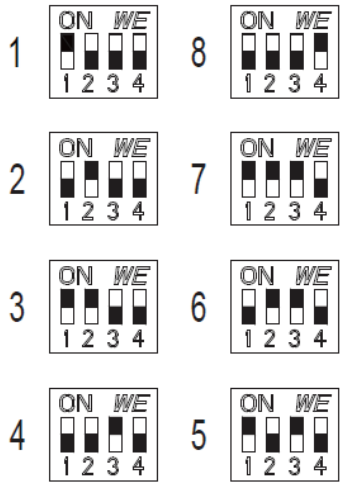


Figure 34 Earthing Points

Step 15 Figure 34 shows the earthing points on the HV50056 and cable box. Please connect them to the grounding copper bar of the customer.



FFigure 31 Connection of the Communication Cables on the Inverter Side

Step 16 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.

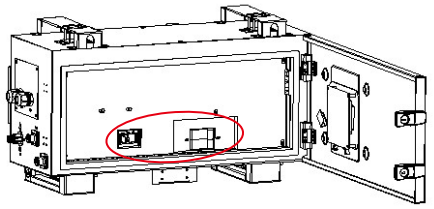


Figure 36 Turning on the Switch

Step 17 After wiring, please open the front cover of HV50056 and turn on the molded case circuit breaker.

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)

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

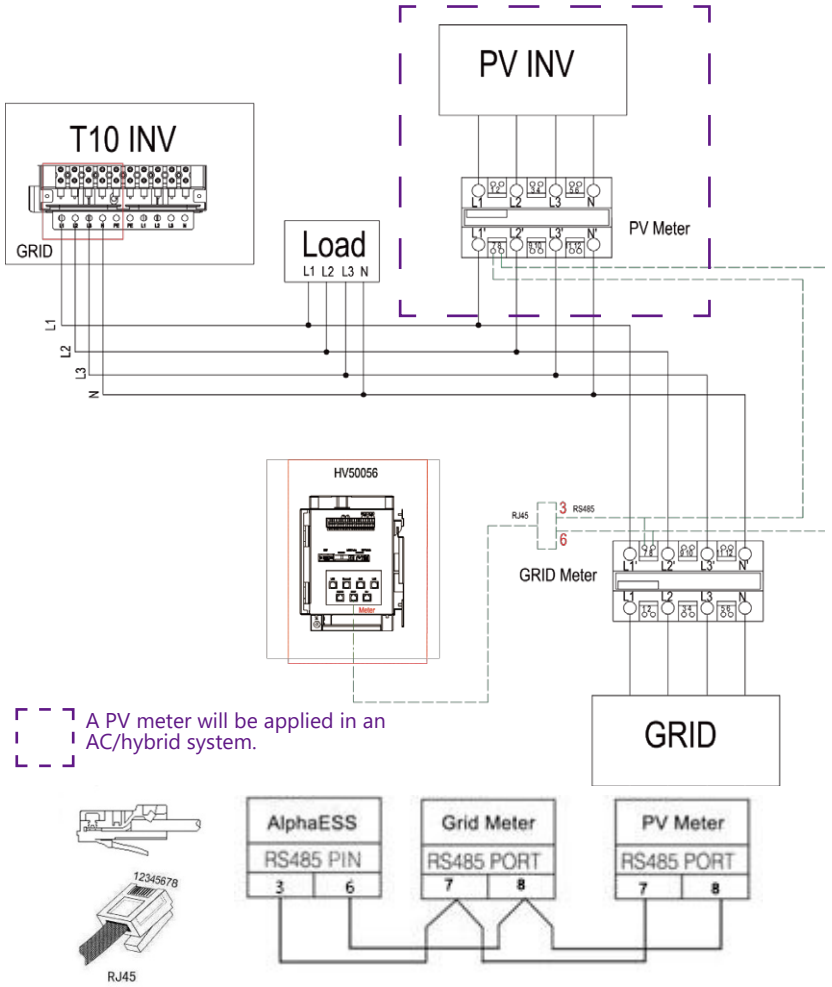


Figure 37 ADL-3000 Connection (without CT, without Meter Plug)

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:

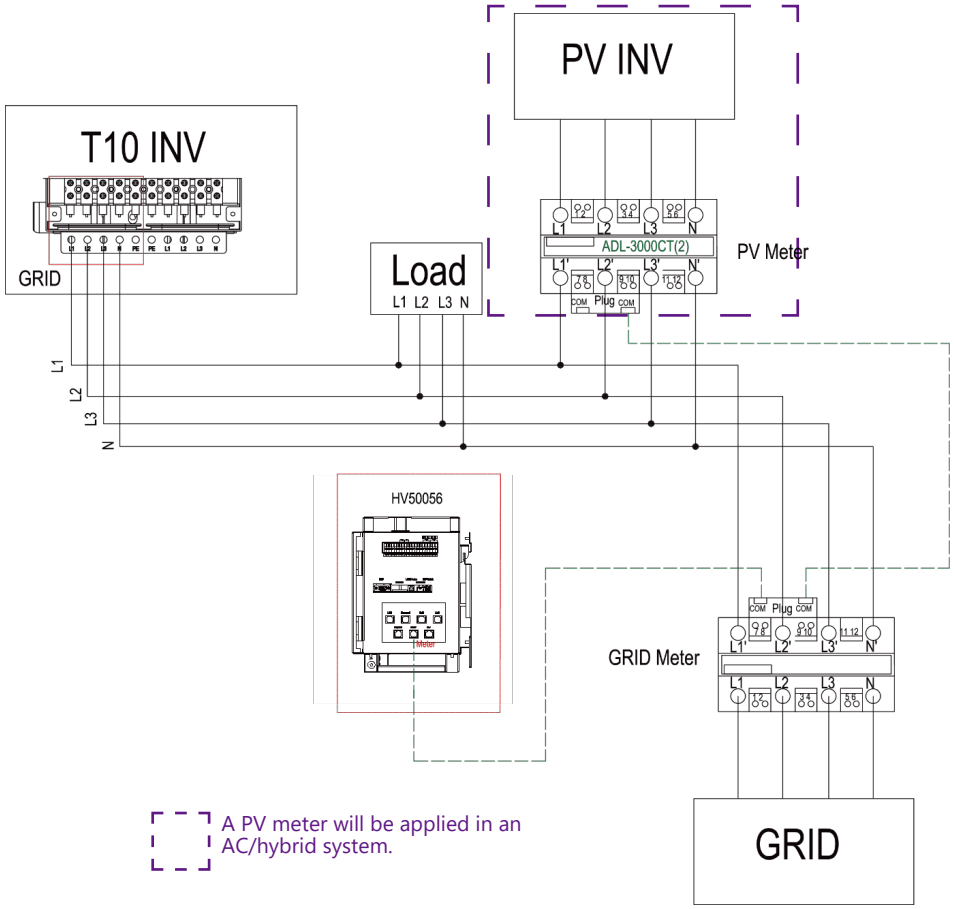


Figure 38 ADL-3000 Connection (without CT, with Meter Plug)

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

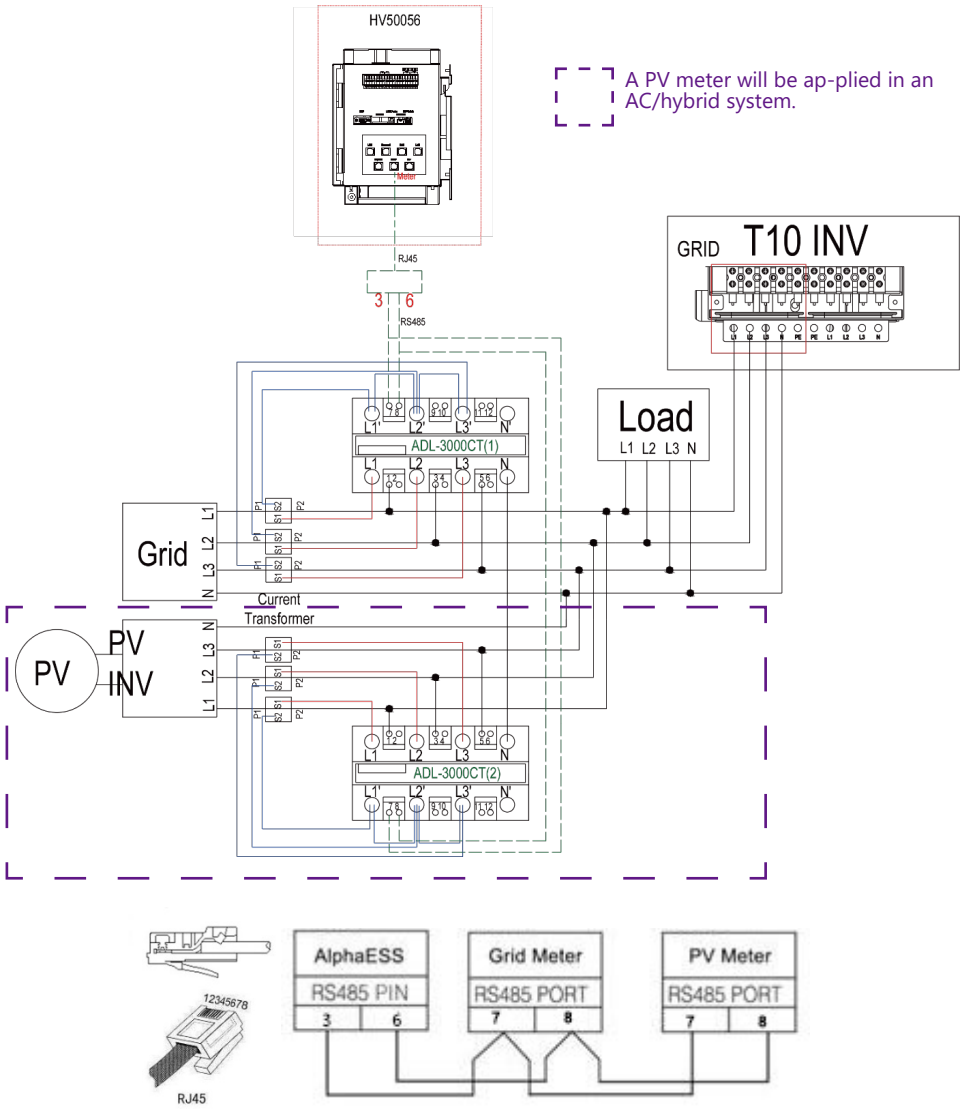


Figure 39 ADL-3000 Connection (with CT, without Meter Plug)

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:

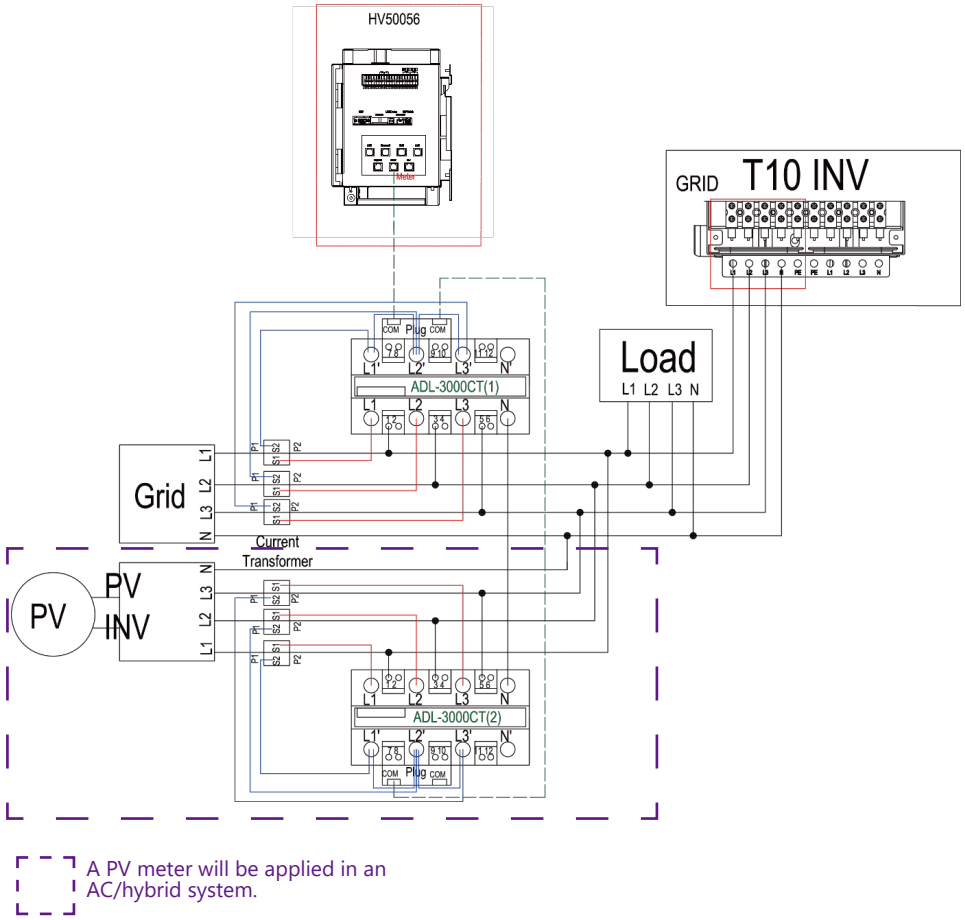


Figure 40 ADL-3000 Connection (with CT, with Meter Plug)

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)

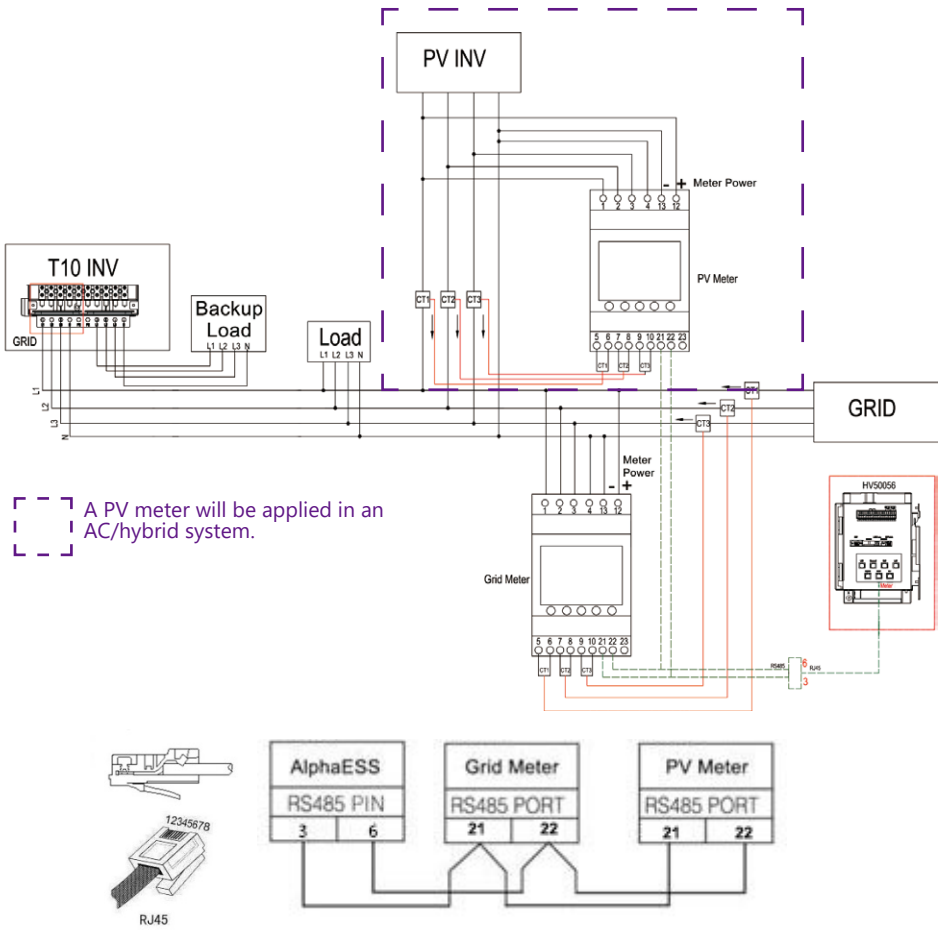


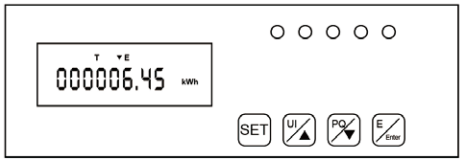
Figure 41 ACR10R with CT Connection (without Meter Plug)

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

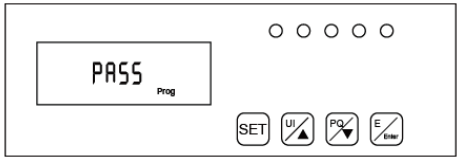
2.4.3 Meter setting

2.4.3.1 ADL3000

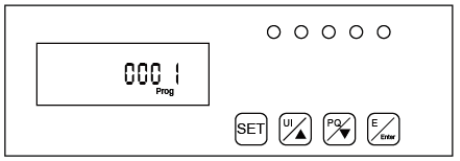
Step 1 The initial interface of the meter (normal working interface) is as shown below:



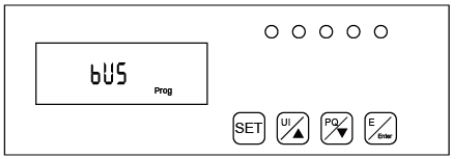
Step 2 Click the "SET" button to enter the password interface:



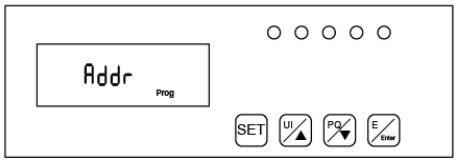
Step 3 Click the "Enter" button to enter the following interface and press the up and down arrow keys to enter the password 0001;



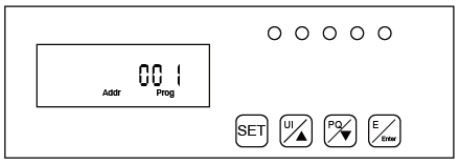
Step 4 Click the "Enter" button and the password input is complete.



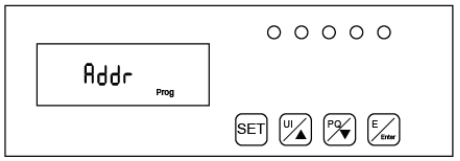
Step 5 Click the "Enter" button again to enter the address interface:



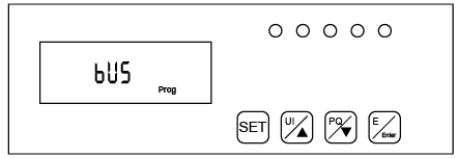
Step 6 Click the "Enter" button to enter the following interface, press the up and down arrow keys to set the meter address, the Grid meter (DC, AC and Hybrid system) address is set to 001, and the PV meter (AC and Hybrid system) address is set to 002.



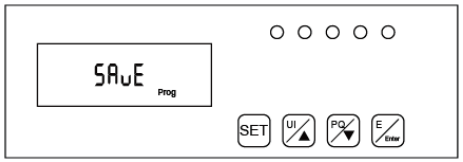
Step 7 Click the "Enter" button and the address setting is completed.



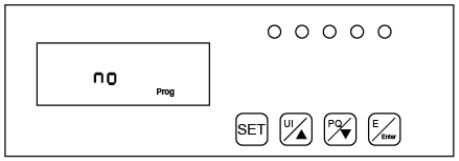
Step 8 Click the "SET" button to enter the following interface:



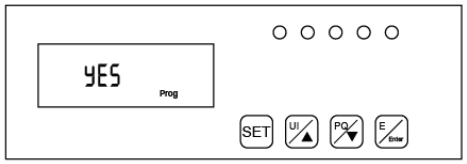
Step 9 Click the “SET” button again to enter the save interface:



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.

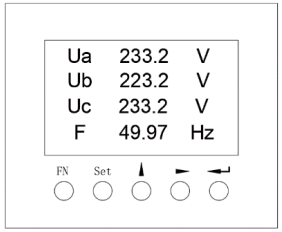


Step 10 Click the "Enter" button and the setting ends.

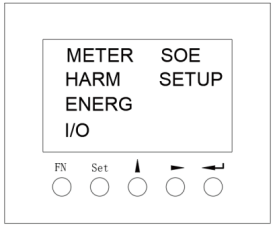


2.4.3.2 ACR10R

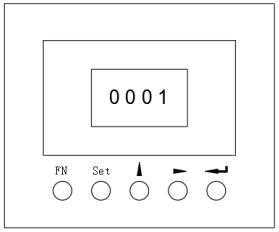
Step 1 This is the initial interface of the meter, click the "Set" button;



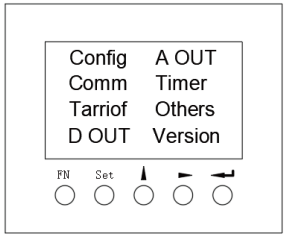
Step 2 Click the “SET” button to enter the password interface:



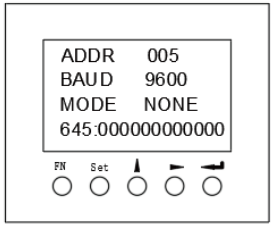
Step 3 On the password input interface, the code is "0001", confirm to enter the setting interface;



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

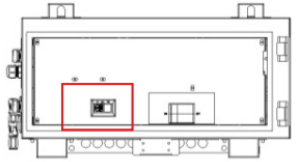


03 SYSTEM OPERATION

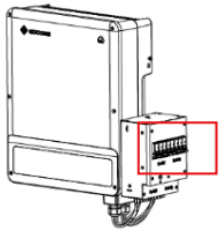
3.1 Switch on

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

Step 1 Turn on the MCCB of HV50056 and AC Switch for Auxiliary Input.



Step 2 Turn on the On-grid AC breaker of the cable box



Step 3 Turn on the PV switch of the inverter

Step 4 If backup load is applied, turn on the Backup AC breaker of the cable box

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.

Step 4 Turn off the PV switch of the inverter

Step 5 Turn off the On-grid AC breaker.

04 EMS INTRODUCTION AND SET UP

4.1 Function Description

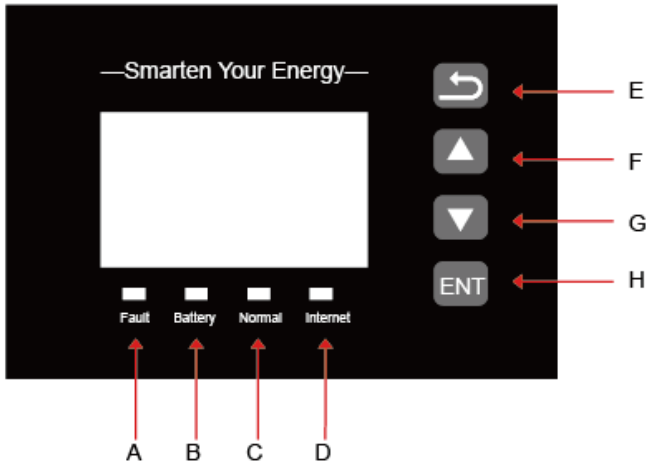


Figure 42 SMILE-T10 EMS Interface

Item	Name	Status	Description
A	Fault		ON: Fault
			OFF: No Fault
B	Battery		ON: Battery communication is OK
			OFF: Battery communication is lost
C	Normal		ON: System works normally
			OFF: System is abnormal or warning
D	Internet		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

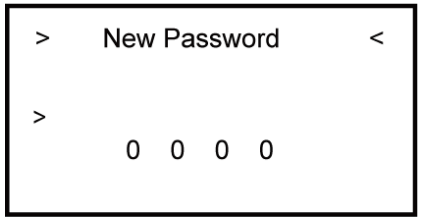


Figure 43 Password Interface

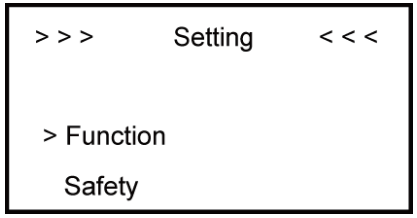


Figure 44 Setting Menu

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).

Step 2 Click Function to enter function setting.

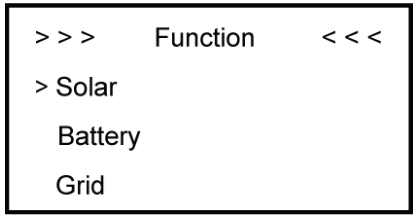


Figure 43 Password Interface

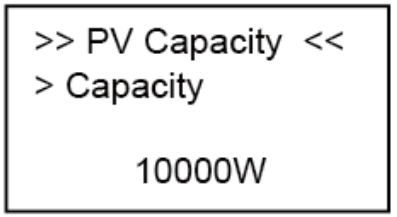


Figure 46 Solar Setting Interface

Step 3 Click Solar to set the Solar relevant information.

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

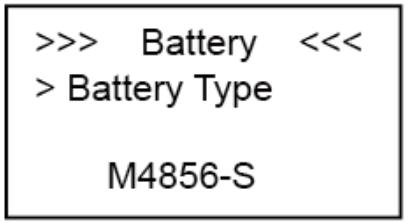


Figure 47 Battery Model Interface

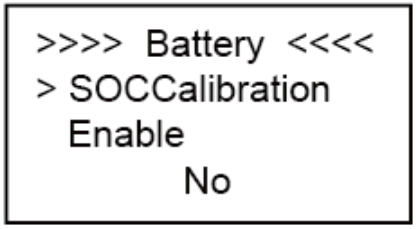


Figure 48 SOC Calibration Interface

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

Step 6 Check SOC Calibration function set No.

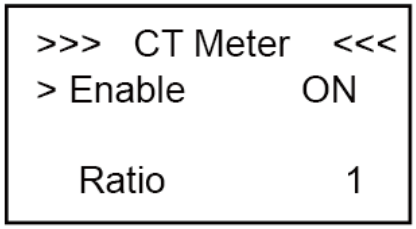


Figure 49 CT Meter Option Interface

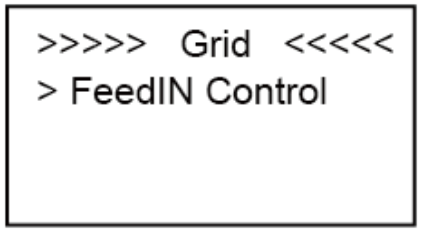


Figure 50 Grid Setting InterfaceInterface

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.

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

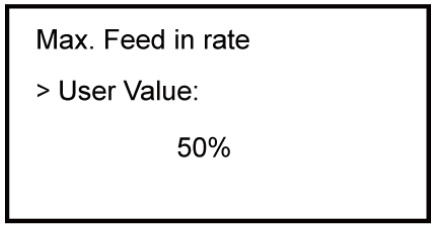


Figure 51 Max. Feed in rate Setting InterfaceInterface

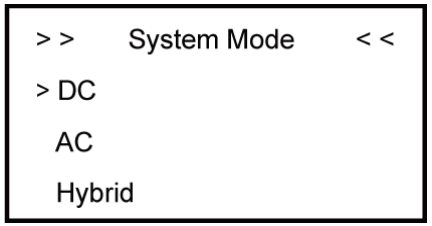


Figure 52 System Mode Setting Interfaceterface

Step 9 Set the Max. Feed in rate value.

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

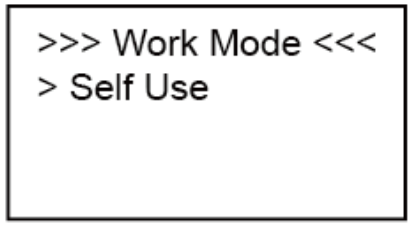


Figure 53 Work Mode Setting Interface

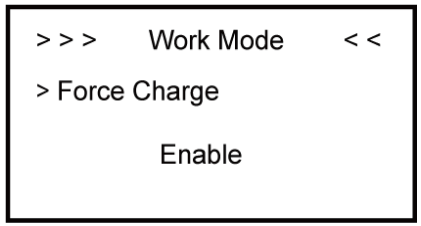


Figure 54 Force Charge Setting Interface

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

Step 11 If you want to use force charge, set Enable here.

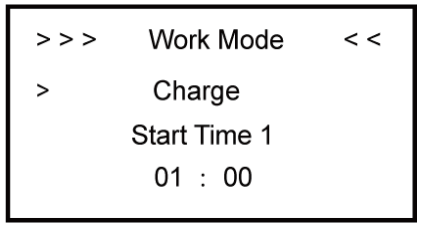


Figure 55 Force Charge Start Time Setting

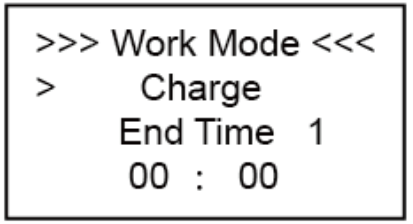
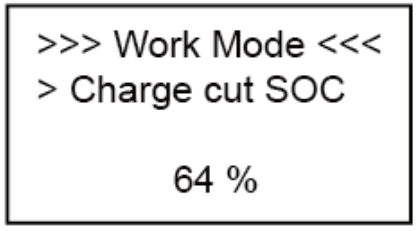


Figure 56 Force Charge End Time Setting

Step 13 Set the charge start time

Step 14 Set the charging start time



FFigure 57 Charging cut SOC Setting

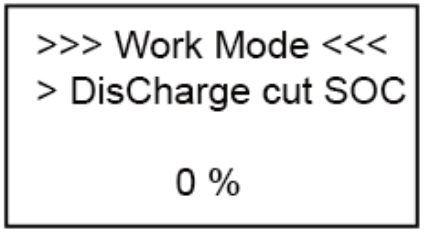


Figure 58 Discharging cut SOC Setting

Step 15 Set the charging cut SOC.

Step 16 Set the discharging cut SOC.

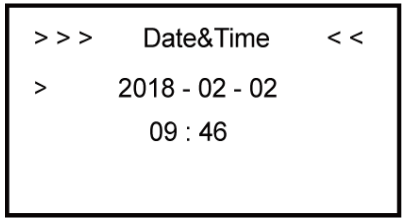


Figure 60 Date&Time Setting Interface

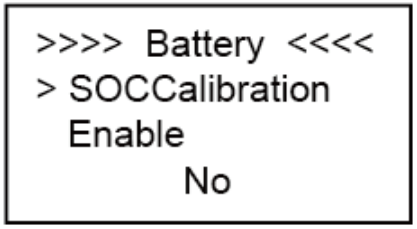


Figure 61 Ethernet interface

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.

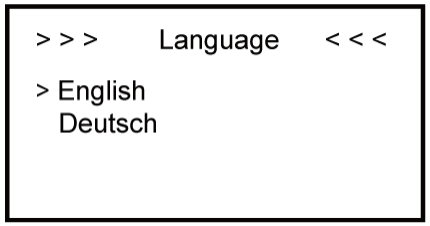


Figure 62 Date&Time Setting Interface

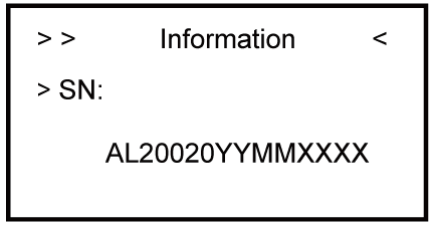


Figure 63 Date&Time Setting Interface

Step 20 Click Language to set language

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:

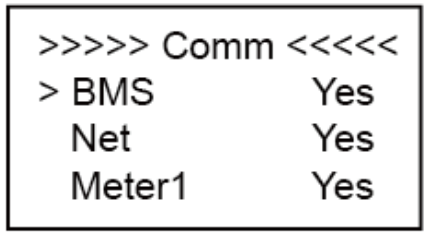


Figure 64 BMS

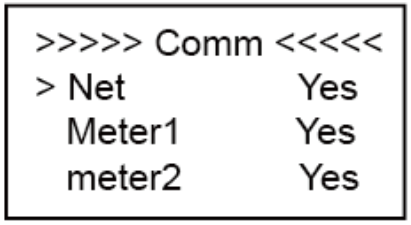


Figure 65 Ethernet and Meter

DC system:

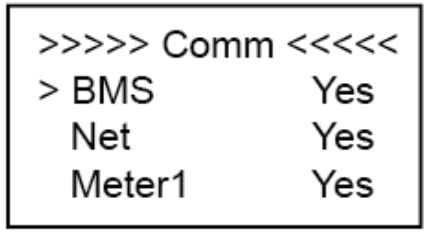


Figure 66 BMS

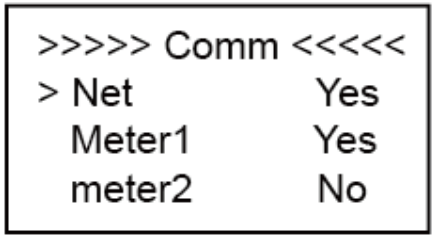


Figure 67 Ethernet and Meter

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

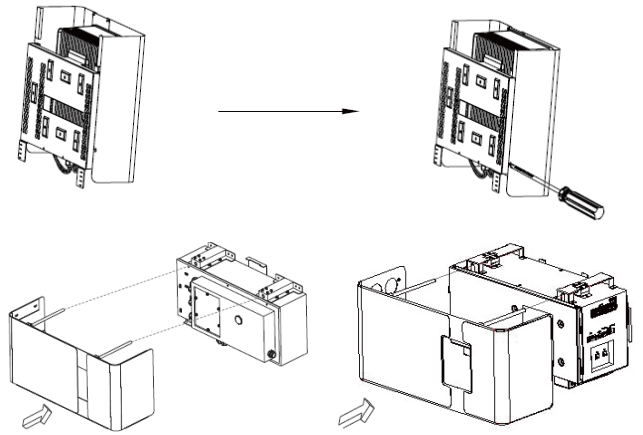


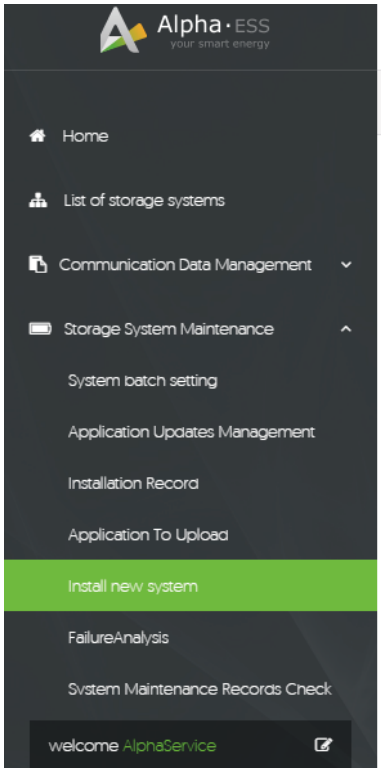
Figure 68 Assembling of the Front Panels

Step 18 **Inverter part:** please unscwer the scwews of Bracket A and hang the front panel of the inverter onto Bracket B. Fix the front panel to Bracket B with scwews.
Battery and control box: Push the top two guide rods into the housing and press the buckle from the bottom right in the middle.

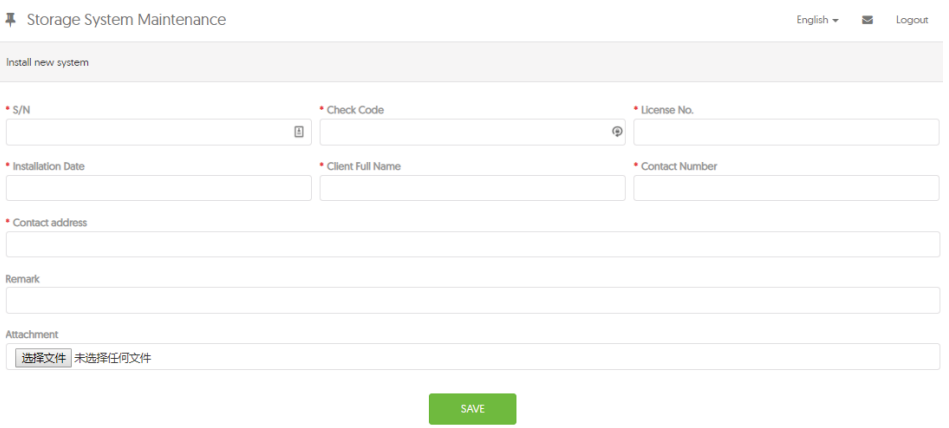
Note: please assemble the front panel of the inverter at first, then HV50056 and the batteries.

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.



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:

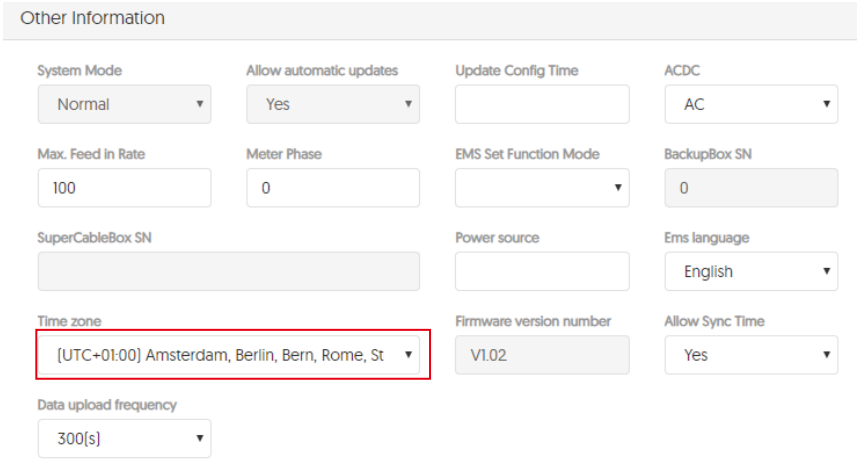
- Address,
- Zip code,
- Contact name,
- E-Mail address,
- Currencies and
- Telephone number.

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
- maximum feed-in rate: In some countries you must set the maximum feed-in rate in % according complaint to the relevant regulation.



06 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

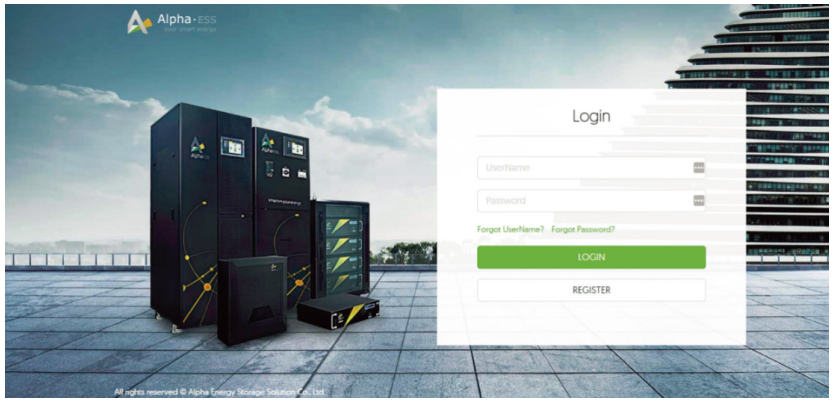
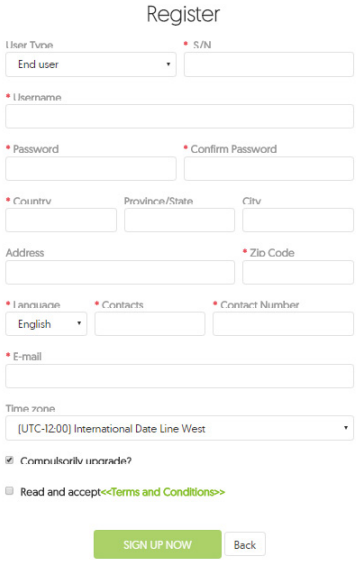


Figure 6.1 Monitoring Login Interface

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.



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

YOUR
SMART
ENERGY

STORION
SMILE-T10

HOME SERIE
CAPACITY
2.9 kWh modular
expandable to 23.0 kWh

+

UPS ability
Outdoor / Indoor
Modular design
24/7 Monitoring

STORION
SMILE-T10

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	12.5 / 12.5A*	12.5 / 22A**	Max. AC Input Current	22.7 A
Max. PV Input Voltage	1000 V*	600 V**	Output Power Factor	1 (Adjustable from 0.8 leading to 0.8 lagging)
Max. Short Current	15.2 / 15.2A*	15.2 / 27.6A**	Backup	UPS
MPPT Number	2		Display	LCD (in HV50056)
MPPT Voltage Range	200 ~ 850 V*	200 ~ 550 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 temperture is below 0 °C or above 40 °C, the performance will be limited.

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