Solenso

THE BRAINWAVE FACTORY



USER MANUAL

Single Phase AC Coupler

SOWAVE SERIES

3.6-6kW

Region : Europe 2025 V2.7.3

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CONTENTS

1. About This Manual 01
1.1 Scope of Validity 01
1.2 Target Group 01

2. Terminals Introduction 02
2.1 Read This First 02
2.2 Safety 02
2.3 User 02
2.4 Support and Contact Information 02

3. AC Coupler Introduction 03
3.1 Basic Instruction 03
3.2 Work Modes 04

4. Installation 07
4.1 Pre-installation 07
4.2 Mounting 11
4.3 Battery Instruction 12
4.4 AC Coupler Port Configuration 22
4.5 System Wiring Configuration 35

5. Add AC Coupler and Battery 40
5.1 Add AC Coupler 40
5.2 Add Battery 44
5.3 Set the Work Mode 46

6. Power ON/OFF 49

7. Maintenance & Trouble Shooting 49
7.1 Maintenance 49
7.2 Trouble Shooting 50

8. Specifications 51

Appendix 52

1. About This Manual

1.1 Scope of Validity

This manual mainly describes the product information, guidelines for installation, operation, maintenance and troubleshooting. And this manual applies to Solenso Single Phase AC Coupler.

- SoWave-SL3.6
- SoWave-SL4.6
- SoWave-SL5
- SoWave-SL6

Please keep this manual available all the time in case of any emergency.

1.2 Target Group

This manual is for qualified personnel. The tasks described in this manual must only be performed by qualified personnel.

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2. Terminals Introduction

2.1 Read This First

This manual includes important instructions for installing and maintaining the Solenso AC Coupler.

2.2 Safety

Instructions

Symbol	Usage
	Indicates hazardous situations that can result in deadly electric shock hazards, other serious physical injuries, or fire hazards.
	Indicates directions that must be fully understood and followed in their entirety to avoid potential safety hazards including equipment damage or personal injury.
	Indicates that the described operation must not be carried out. The reader should stop, use caution, and fully understand the operations explained before proceeding.

- Note that only professionals may install or replace AC Coupler.
- Do not try to repair the AC coupler without approval from Solenso. If the AC coupler is damaged, send the AC Coupler back to your installer for repairing/replacement. Disassembling the AC coupler without approval from Solenso will invalidate the remaining warranty period.
- Read all instructions and warnings on the technical specifications carefully.
- Do not use Solenso products in a way that is not suggested by the manufacturer. Doing so may cause death or injury to persons or damage to the equipment.

2.3 User

This manual is intended for use by professional installation and maintenance personnel only.

2.4 Support and Contact Information

If you have technical queries concerning our products, contact your system installer or distributor.
If further support is required, contact Solenso' support at this link.

- **https://www.solenso-power.com / www.solenso-global.com**
- **Solenso Technical Service Center: contact@solenso.pro / afterservice@solenso-global.com**

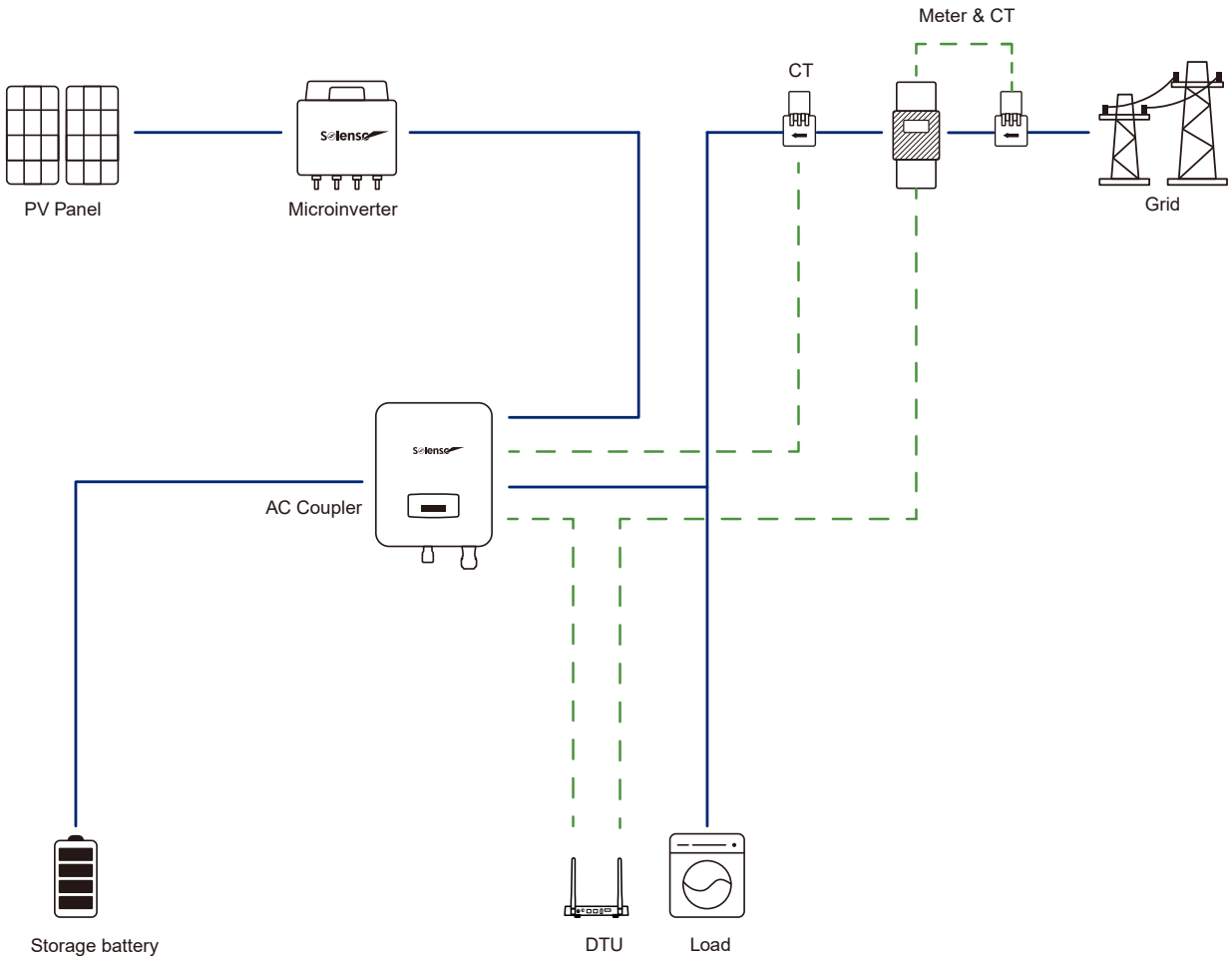
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3. AC Coupler Introduction

3.1 Basic Instruction

The Solenso AC Couplers are designed to increase energy independence for homeowners. Energy management is based on time-of-use and demand charge rate structures, significantly reduce the amount of energy purchased from the public grid and optimize self-consumption.

Single Phase AC coupler for Solenso Storage Solution

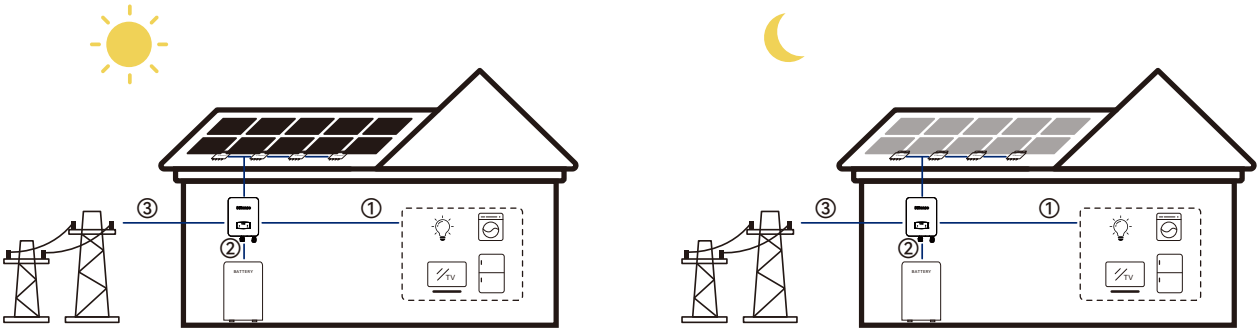


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3.2 Work Modes

1. Self-consumption

The self-consumption mode is for the regions with low feed-in tariff and high electricity prices. The energy produced by the PV system is used to optimize self-consumption needs. The excess energy is used to recharge the batteries, any remaining excess is then exported to the grid.



Energy flow:

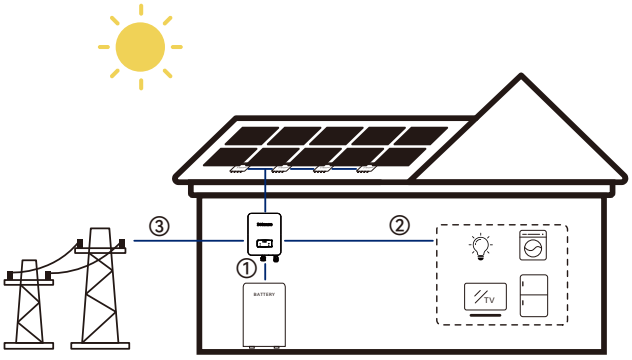
PV → Load → Battery → Grid

Self-consumption--Extra setting

The Extra Setting allows you to customize Forced Charge setting, Forced AC grid charging setting, Forced Discharging and Forbidden Discharging setting.

A. Forced Charge

Forced charge mode will prioritize charging the battery for a set period of time, charging at a set charging power percentage, and stopping when the set Charging Max SOC is reached. Up to 4 customizable time periods.



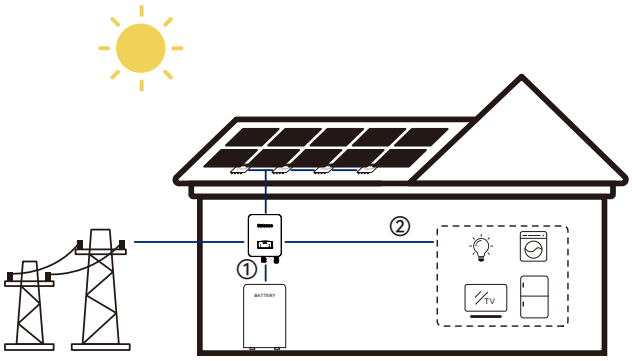
Energy flow:

PV → Battery → Load → Grid

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B. Forced AC Grid Charging

Forced AC Grid Charging mode will prioritize charging the battery for a set period of time, charging at a set charging power percentage, and stopping when the set Charging Max SOC is reached. Up to 4 customizable time periods.



Energy flow:

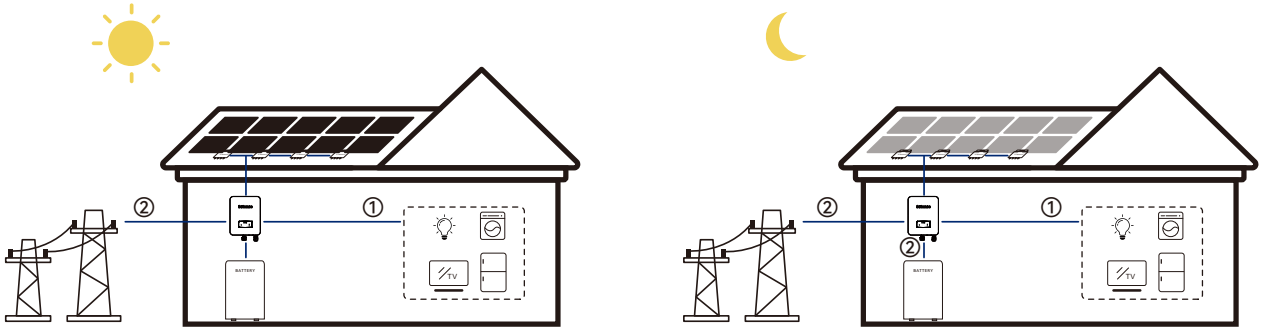
PV and Grid → Battery → Load

⚠ Note:

After select AC Grid charging, the AC will also charge the battery when the PV is low or no PV.

C. Forced Discharging

Forced discharge mode will prioritize discharging the battery for a set period of time, discharging at a set discharging power percentage, and stopping when the set Discharging Min SOC is reached. Up to 4 customizable time periods.

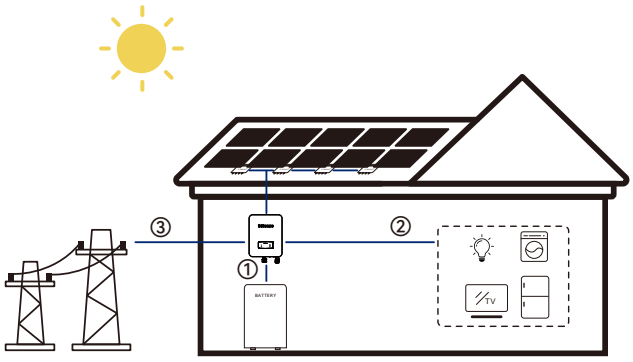


Energy flow: Battery and PV → Load → Grid

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D. Forbidden Discharging

Forbidden Discharging mode will disables discharging the battery for a set period of time,
Up to 4 customizable time periods.



Energy flow:

PV → Battery → Load → Grid

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4. Installation

4.1 Pre-installation

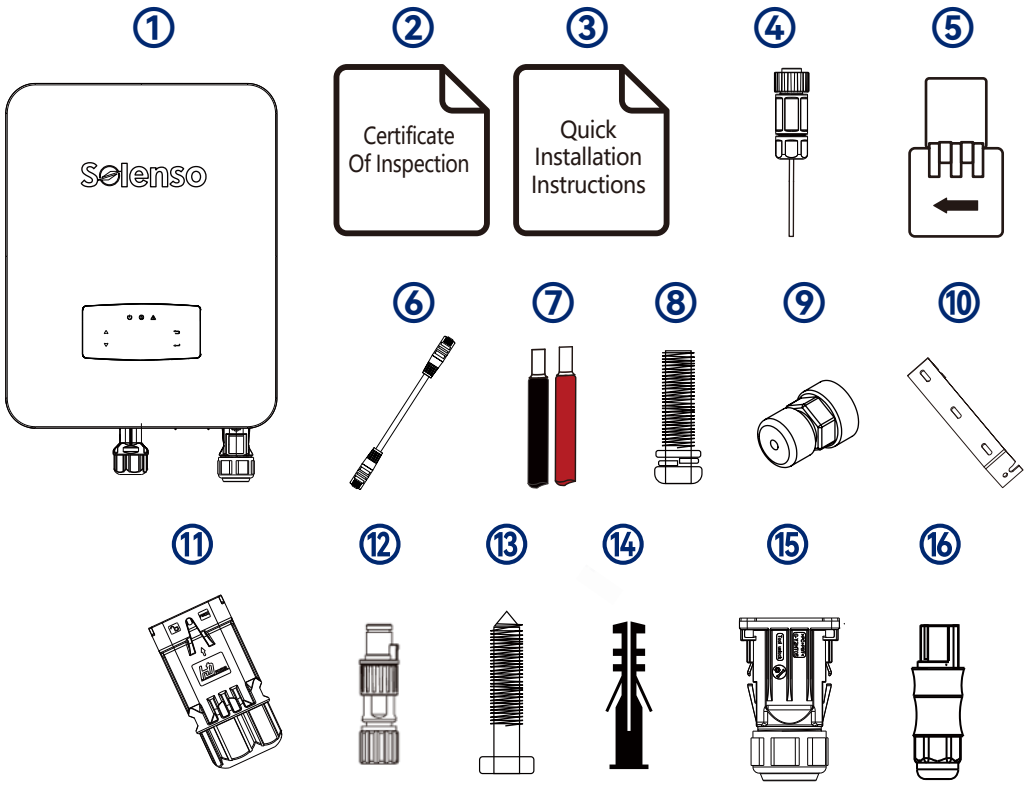
4.1.1 Unpacking & Package List

Unpacking

On receiving the AC coupler, please check to make sure the packing and all components are not missing or damaged. Please contact your dealer directly for supports if there is any damage or missing components.

Package List

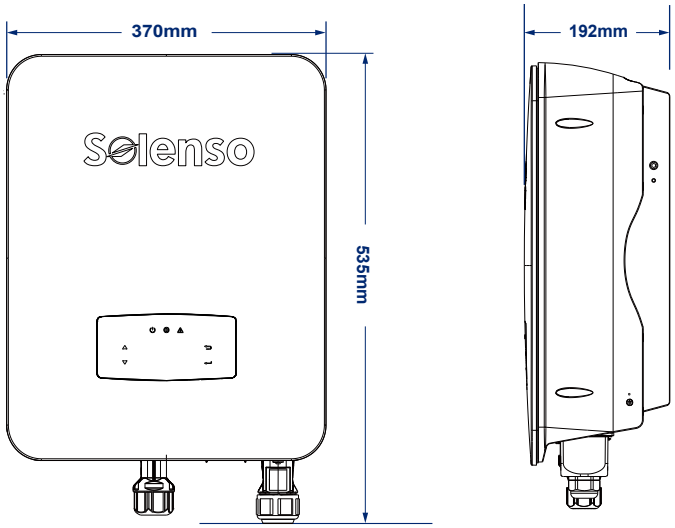
Open the package, please check the packing list shown as below.



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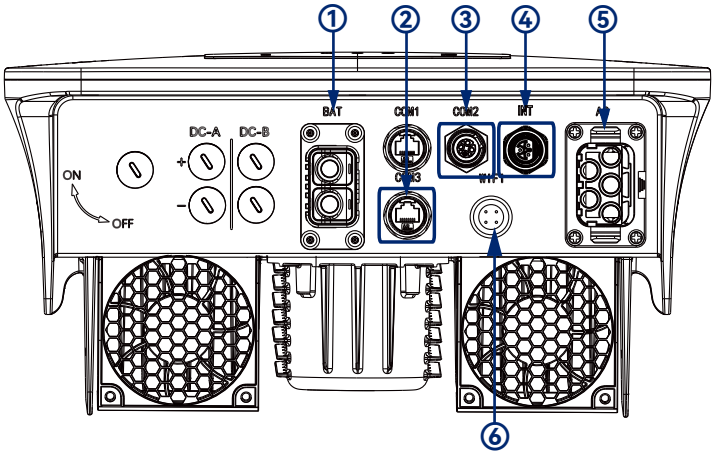
No.	Qty	Items	No.	Qty	Items
1	1	AC Coupler	9	2	Communication Connectors
2	1	Certificate Of Inspection	10	1	Wall Mounting Bracket
3	1	Quick Installation Instructions	11	1	Battery Connector
4	1	Pre-Assembled 4Pin Cable (5m)	12	1	CT Conncetors
5	1	CT	13	3	Mounting Bracket Screw
6	2	Communication T568B	14	3	Plastic Expansion Tube
7	1	Battery wire (25mm^2)	15	1	AC Waterproof Cover
8	1	Security Screw	16	1	Microinverter AC terminal

4.1.2 Product Overview



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AC coupler Terminals





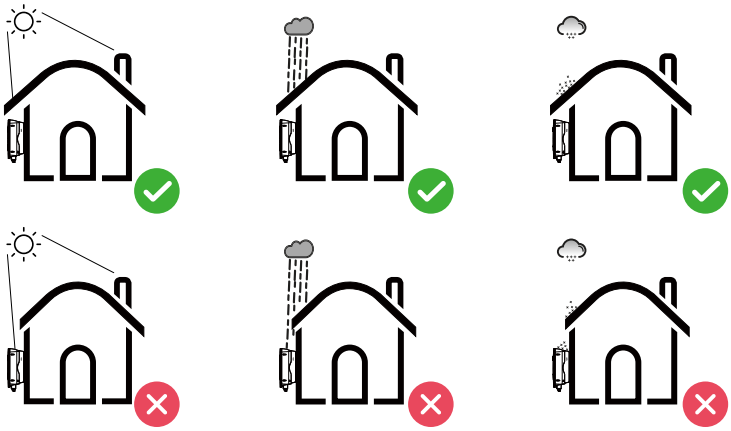
No.	Items	No.	Items
1	Battery Port	4	Microinverter Port
2	BAT Communication Port	5	AC Port & EPS Port
3	CT Communication Port	6	DTU Communication Port

4.1.3 Mounting Location

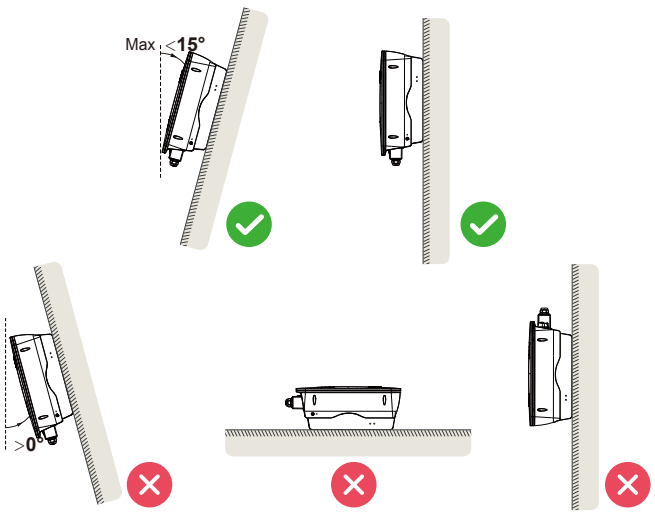
The AC coupler are designed for indoor and outdoor installation (IP65), to increase the safety, performance and lifespan of the AC coupler, please select the mounting location carefully based on the following rules:

• The AC coupler should be installed on a solid surface, far from flammable or corrosion materials, where is suitable for AC coupler's weight and dimensions.
• The ambient temperature should be within -25℃ ~ 60℃ (between -13 °F and 140°F).
• The installation of AC coupler should be protected under shelter. Do not expose the AC coupler to direct sunlight, water, rain, snow, spray lightning, etc.

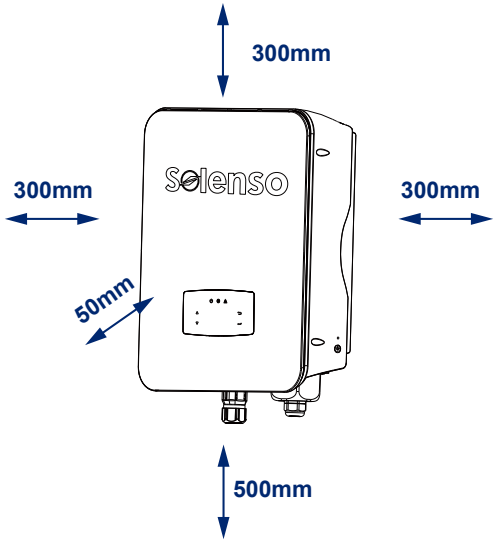
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• The AC coupler should be installed vertically on the wall, or lean back on plane with a limited tilted angle. Please refer to below picture.



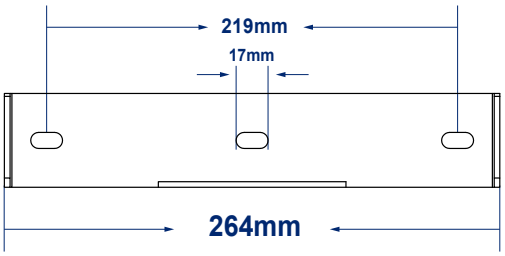
• Leave the enough space around AC coupler, easy for accessing to the AC coupler, connection points and maintenance.

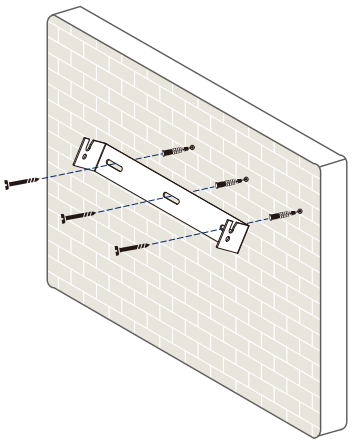


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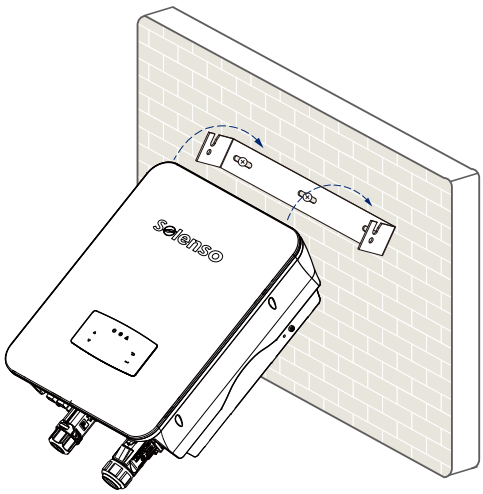
4.2 Mounting

Step: 1

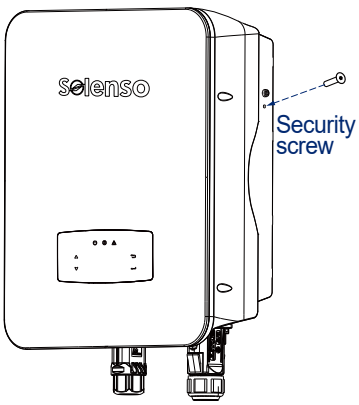


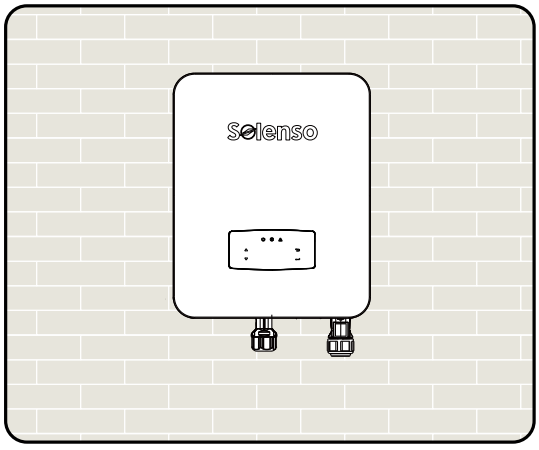


Step: 2



Step: 3



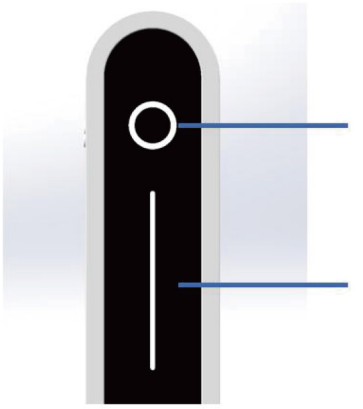


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4.3 Battery Instruction

4.3.1 LED Instruction

There are 2 LED indicator, 1 strip LED gives status of SoC, 1 circular LED displays the battery status (indicating charging, discharging etc.).



Definition of LED

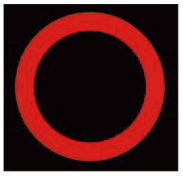




White normal indicator light



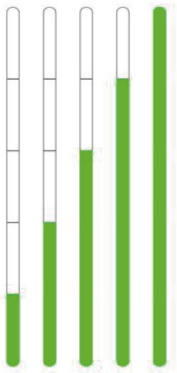
Blue charging and discharging running light



Red fault warning light



Green SOC light



Divided into 5 grids for display, each grid represents 20% battery level, fully lit when fully charged.

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4.3.2 Package List

Open the package, please check the packing list shown as below.



①


②


③


④


⑤


⑥


⑦


⑧

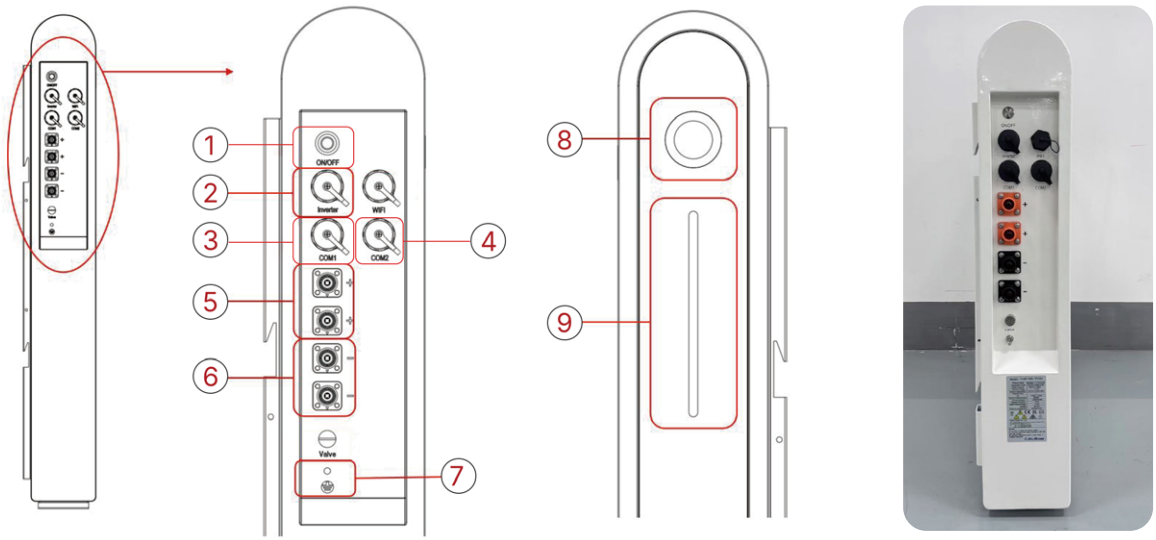

⑨


⑩

No.	Qty	Items	Specification	Note
1	1	Battery System	Lithium Battery	Standard
2	1	Wall-mount	Bracket	Standard
3	4	Accessory Bag	Expansion Bolts: M6x80	Standard
4	1	Accessory Bag	Hexagonal Wrench	Standard
5	4	Accessory Bag	Screw	Standard
6	2	Output Cable	Power Cable Positive: Red plug,25mm^2/L1.5m Negative: Black plug,25mm^2/L1.5m	Option
7	1	Output Cable	Communication cable to Inverter Black/L1.5m/Double RJ45 Plug	Option
8	1	Output Cable	Ground Cable Yellow,Green/L1m/Double OT M6	Option
9	2	Paralle Cable	Power Cable Positive: Red plug,25mm^2/L1.5m Negative: Black plug,25mm^2/L1.5m	Option
10	1	Paralle Cable	Communication cable to Inverter Black/L1.5m/Double RJ45 Plug	Option

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4.3.3 Battery Port Instruction



No.	Items	Model	Remarks
1	Power On/Off Switch		
2	Communication port	RJ45	Single RS485 and CAN for inverter and app
3	Communication port	RJ45	
4	Communication port	RJ45	
5	Port Positive x2		Orange, 25 mm^2
6	Port Negative x2		Black, 25 mm^2
7	GND	M6	Yellow-Green, 10 AWG
8	RUN LED		
9	SOC LED		

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4.3.4 Battery Cable Configuration

4.3.4.1 Power Cable Connection

① Single unit Connection

Locate the positive and negative power cables among the battery package. Connect them to the + and - terminals of the battery.

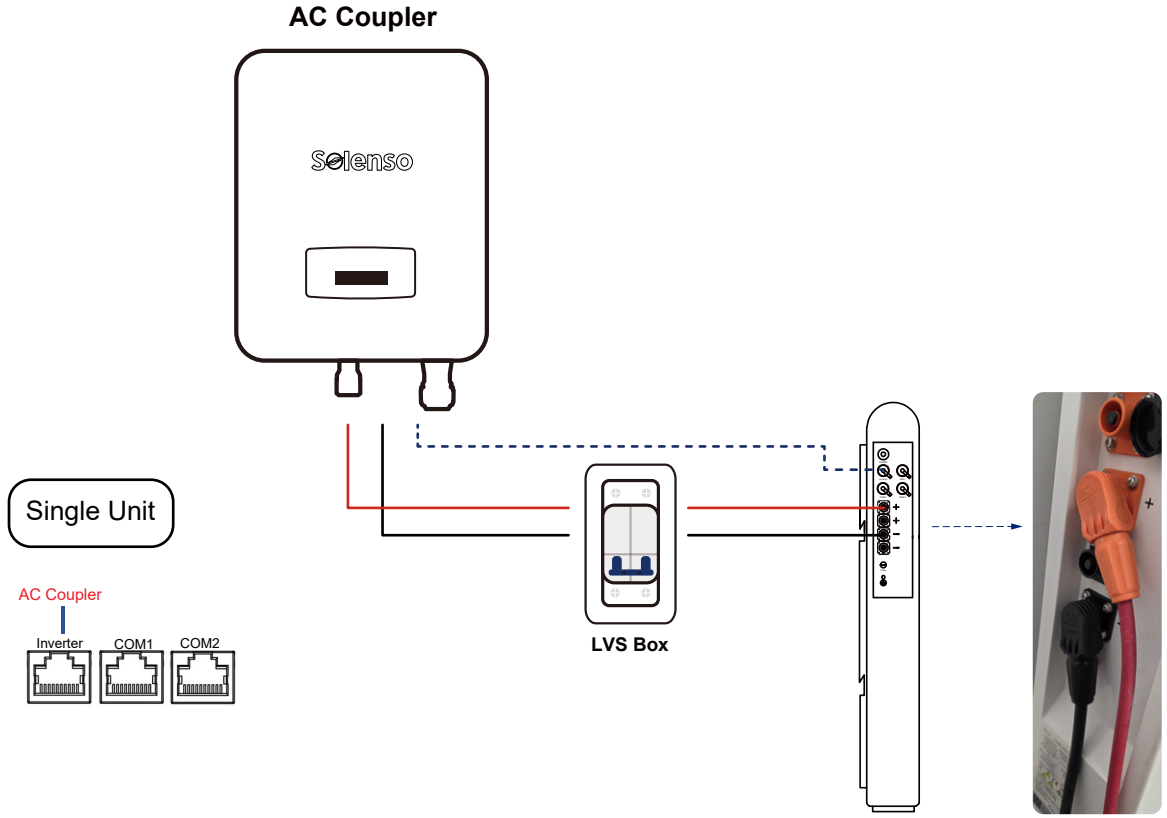


Fig.4.3.4.1 Single Unit Connection

Single unit charge/discharge power with LVS Box

		Charge power (kW)		Discharge power (kW)	
AC Coupler	Breaker	5.12kWh	10.24kWh	5.12kWh	10.24kWh
Sowave-SL6	125A	2.56	5.12	5.12	5.12

We have two kinds of LVS Box. LVSB-C for SoWave-SL6 AC Coupler.

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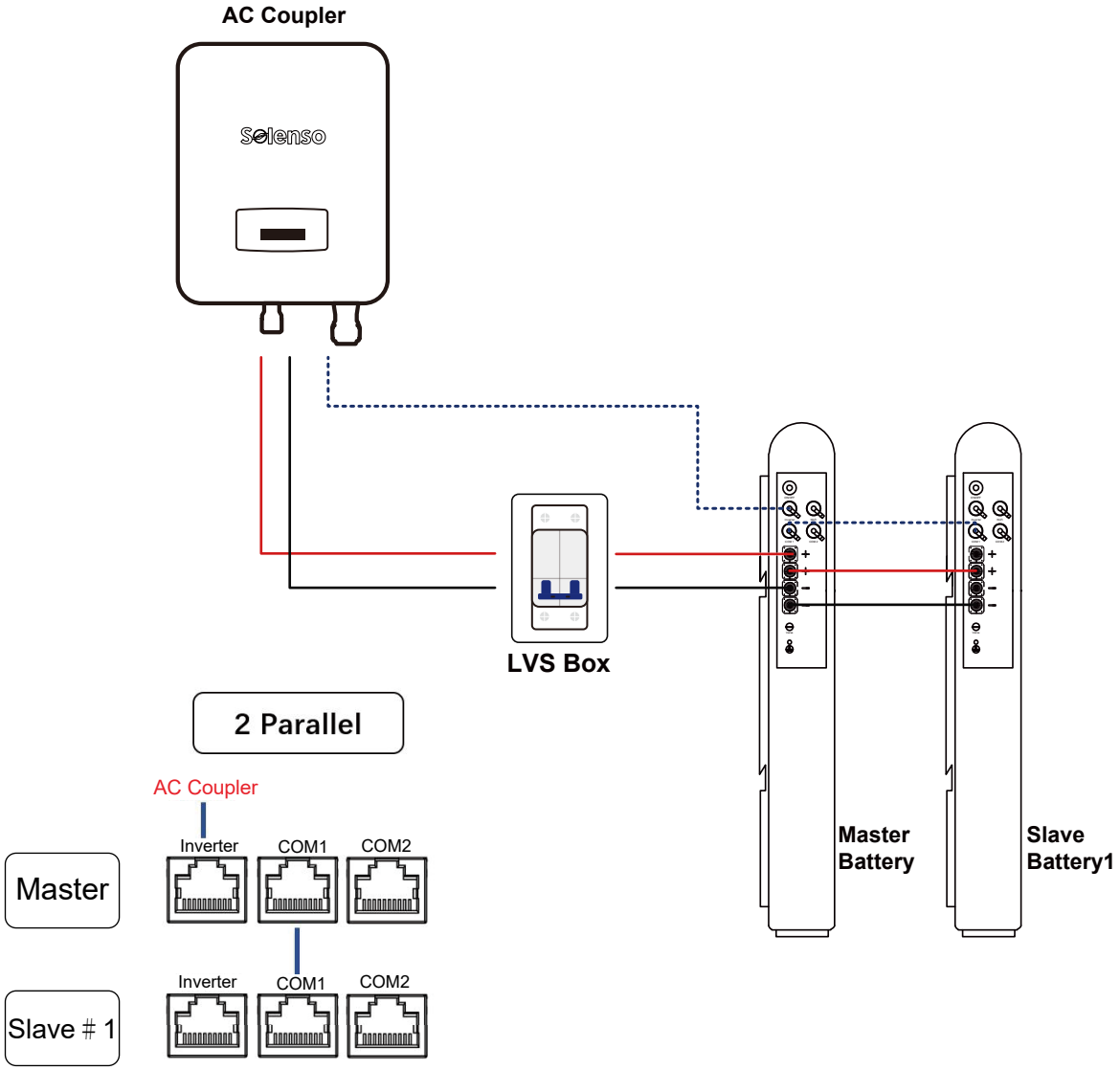
Parallel Connection Requirement:

CALB lithium batteries with different capacities (e.g. 5.12 kWh and 10.24 kWh) must NOT be connected in parallel. Parallel connection of batteries with different capacities may cause uneven current sharing, inconsistent SOC behavior, premature BMS protection, and accelerated aging of the smaller-capacity battery. Only CALB batteries of the same model, capacity, and voltage are permitted for parallel connection.

② Multiple Units Connection

Before connecting the batteries in parallel. Please ensure that the battery voltage difference is less than 1V.

Method 1: Master and Slave Parallel. Method 1 is applicable to the Sowave-SL6 AC Coupler. In this configuration, a maximum of two batteries can be connected.



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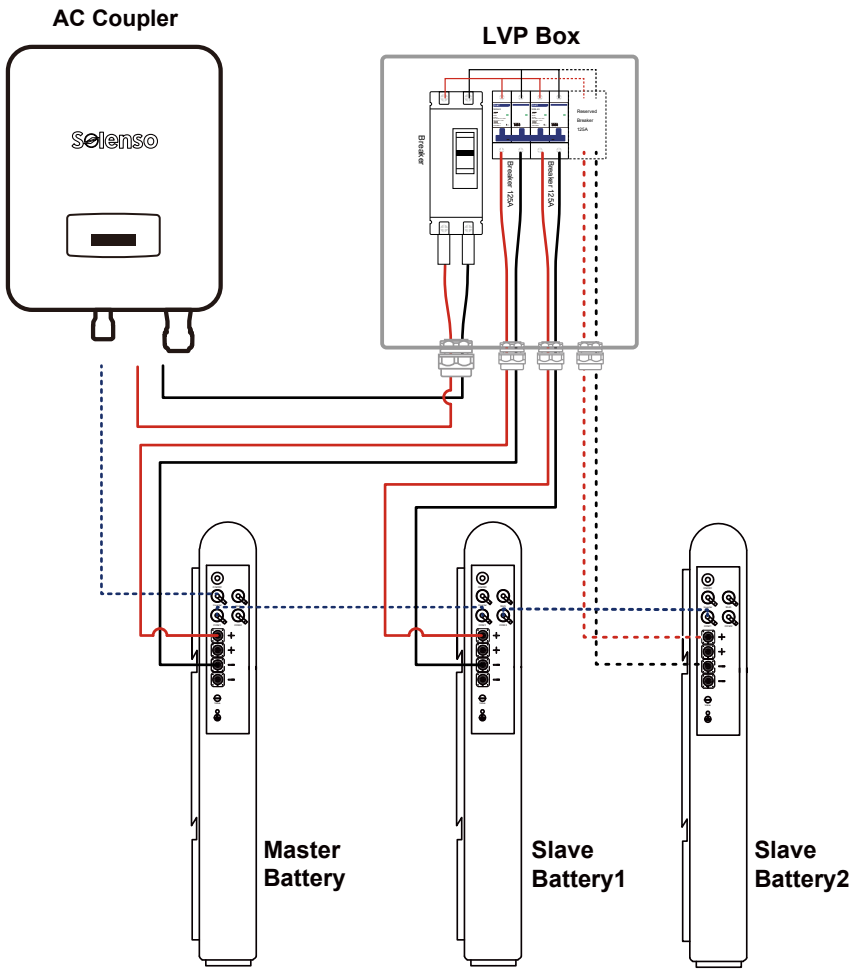
Two units charge/discharge power with LVS Box

			Charge power (kW)		Discharge power (kW)	
AC Coupler	Battery quantity	Breaker	5.12kWh	10.24kWh	5.12kWh	10.24kWh
Sowave-SL6	2pcs	125A	5.12	6	6	6

Method 2: Bus Cable Parallel. Multi-battery connections shall be implemented using the LVP box wiring configuration.

Multiple units charge/discharge power with LVP Box

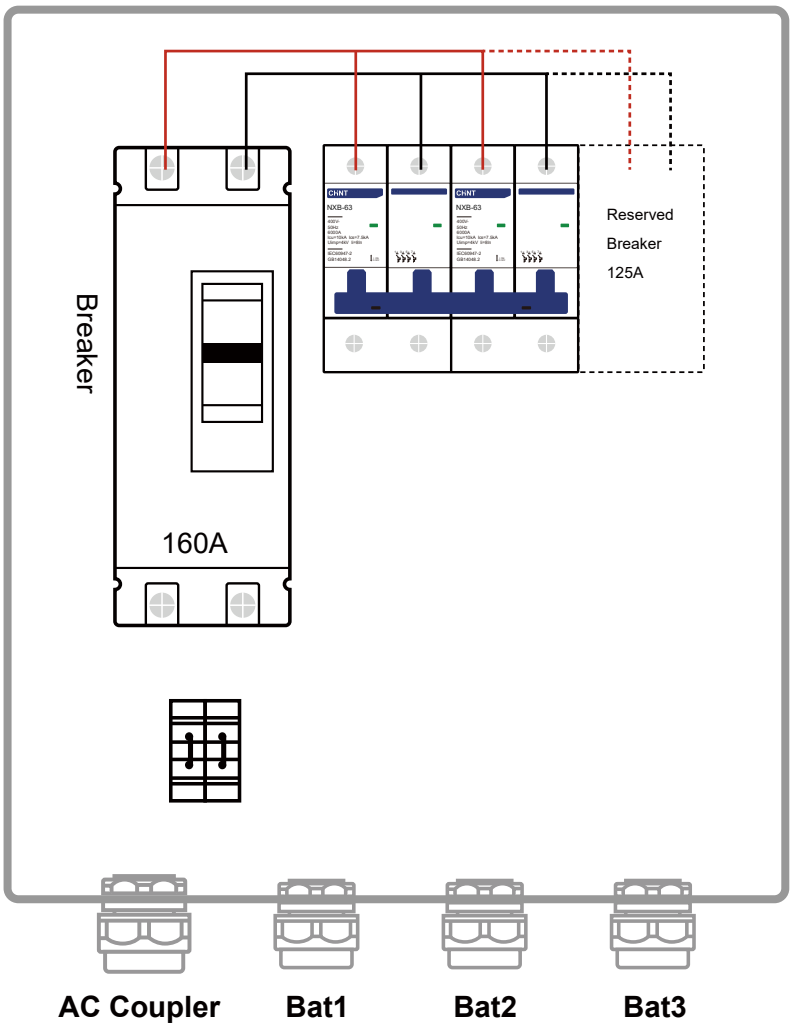
				Charge power (kW)		Discharge power (kW)	
LVP Box	AC Coupler	Battery quantity	Main Breaker	5.12kWh	10.24kWh	5.12kWh	10.24kWh
	Sowave-SL6	2pcs	160A	5.12	6	6	6
		3pcs	160A	6	6	6	6



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4.3.4.2 LVP Box Introduction

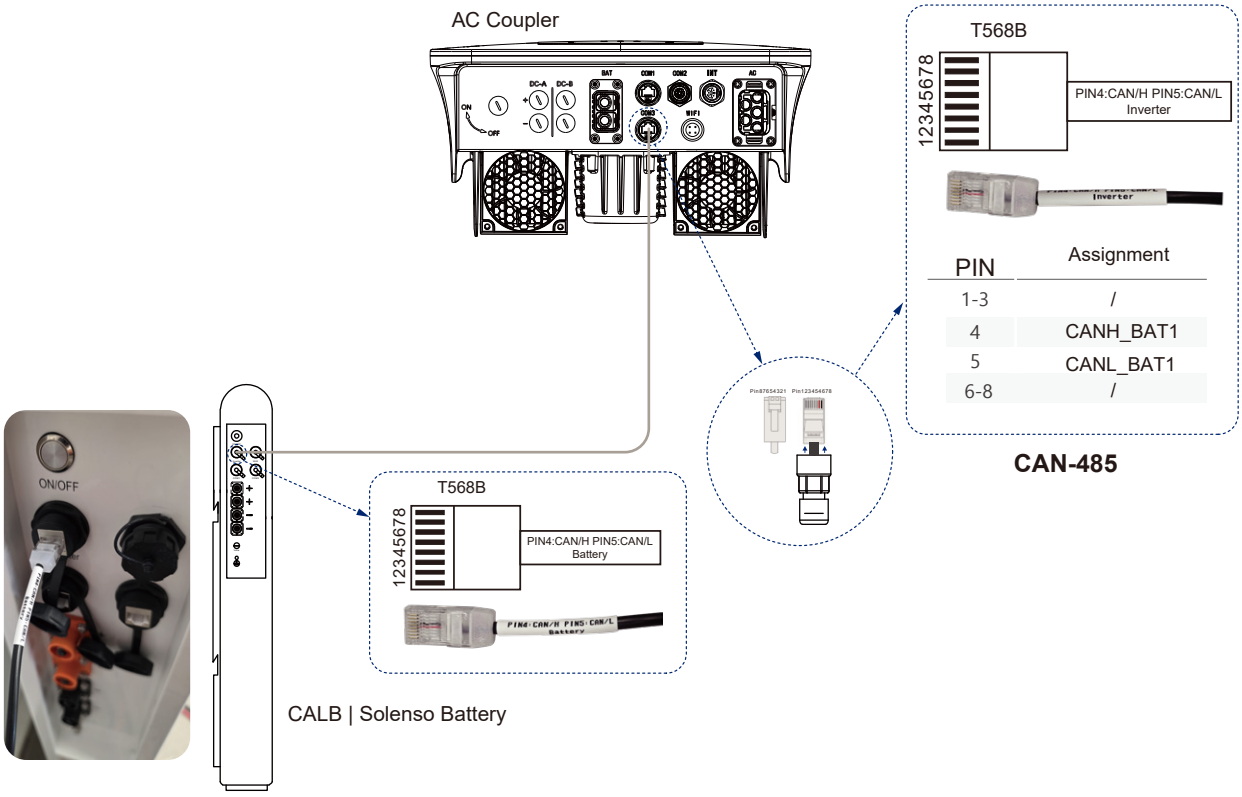
The LVP Box accommodates up to three batteries connected to the AC Coupler. LVP Box includes one main breaker and two 125A breaker. We reserved one position for you to add one more 125A breaker. If you need it, please contact the supplier to purchase.



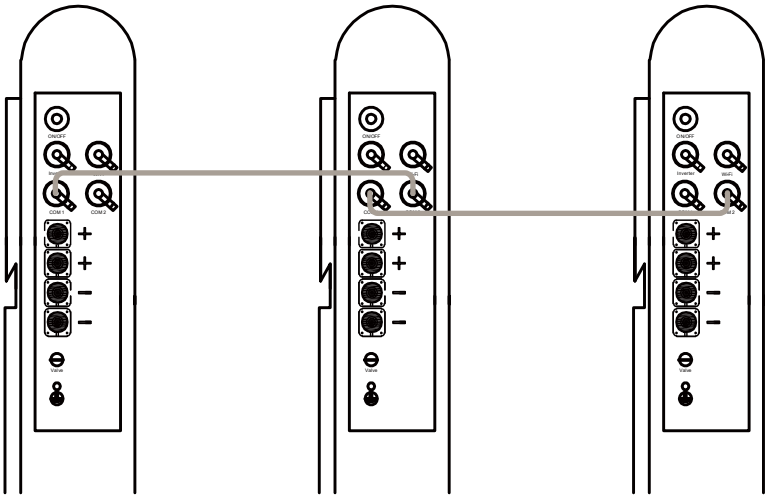
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4.3.4.3 Communication Cable Connection

As shown in the AC Coupler's diagram, find the communication T568B cable with white markings on both ends. Connect the “battery” shown in white on one end to the battery's Inverter Port. The “inverter” displayed in white on the other end is connected to the COM3 of the AC coupler.



Multiple units communication parallel connection method: Connect the communication cable to the COM1 port of the last battery and the COM2 port of the next battery to ensure the communication function.



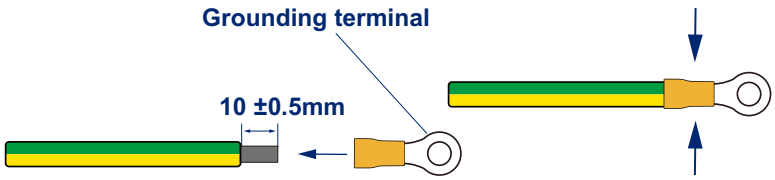
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4.3.5 Battery Earth Connection

⚠ **Note:**

A protective earth (PE) terminal should be connected to the Battery.The ground cable can ensure the safety of the equipment.

Step: 1

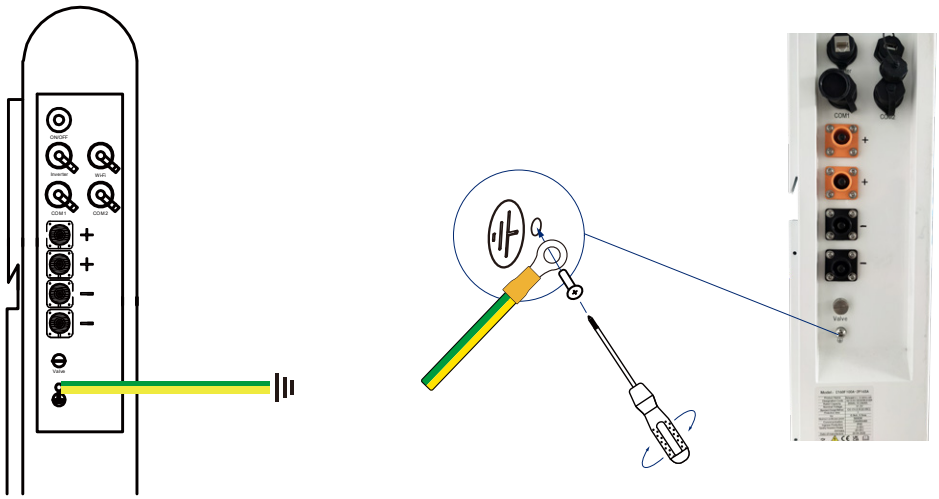


⚠ **Note:**

You can find the ground cable in the battery package.

Ground Cable: Yellow,Green/L1m/Double OT M6.

Step: 2



Fix the grounding screw to the grounding connection of the machine housing.

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4.3.6 Powering On and Off the Energy Storage System

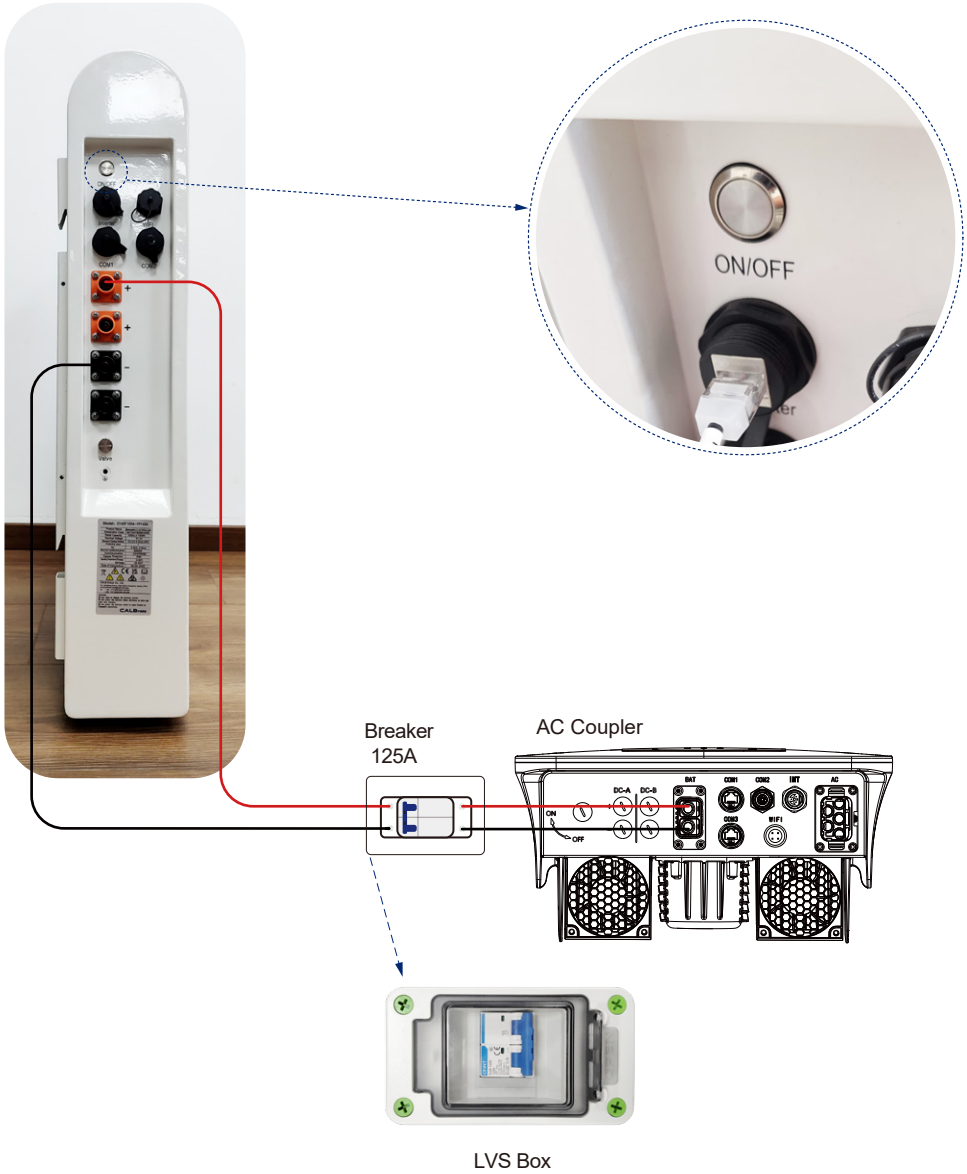
System Operation Notice:

- When turning ON the energy storage system:

1. Switch ON the circuit breaker first
2. Then turn ON the battery power

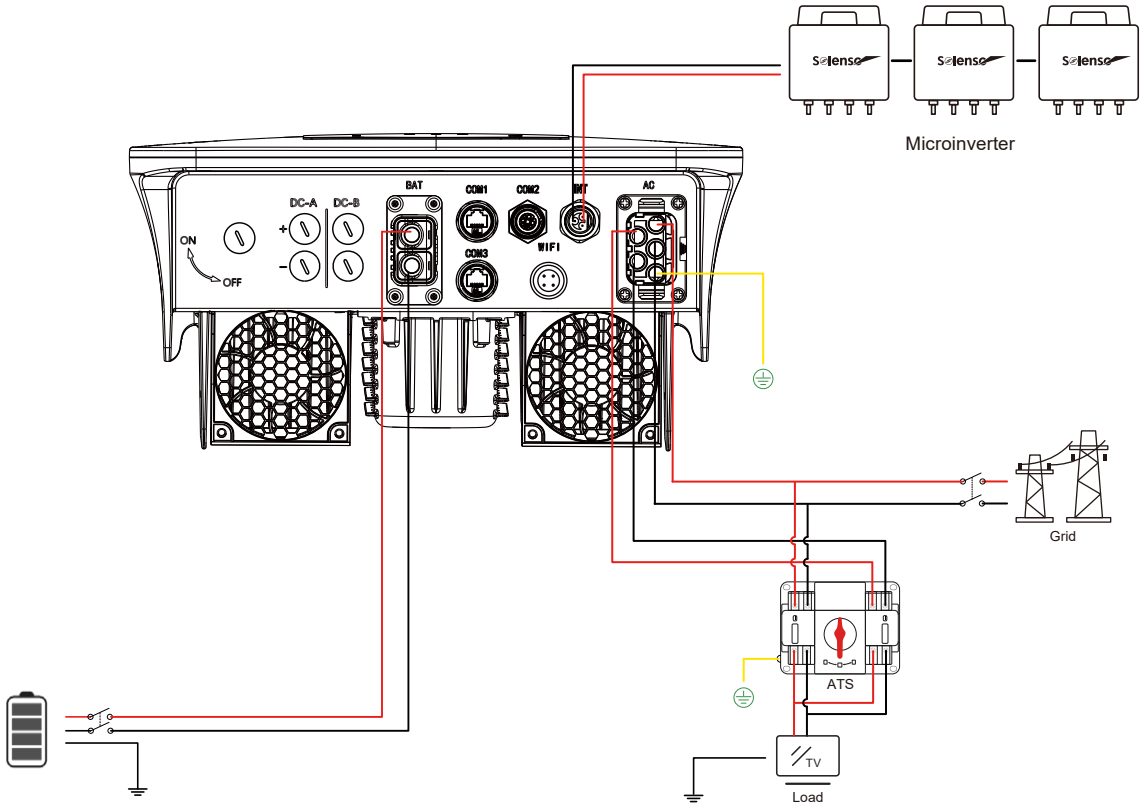
- When turning OFF the energy storage system:

1. Turn OFF the battery power first
2. Then switch OFF the circuit breaker

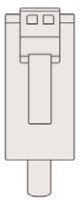


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4.4 AC Coupler Port Configuration



Pin87654321



Pin123454678

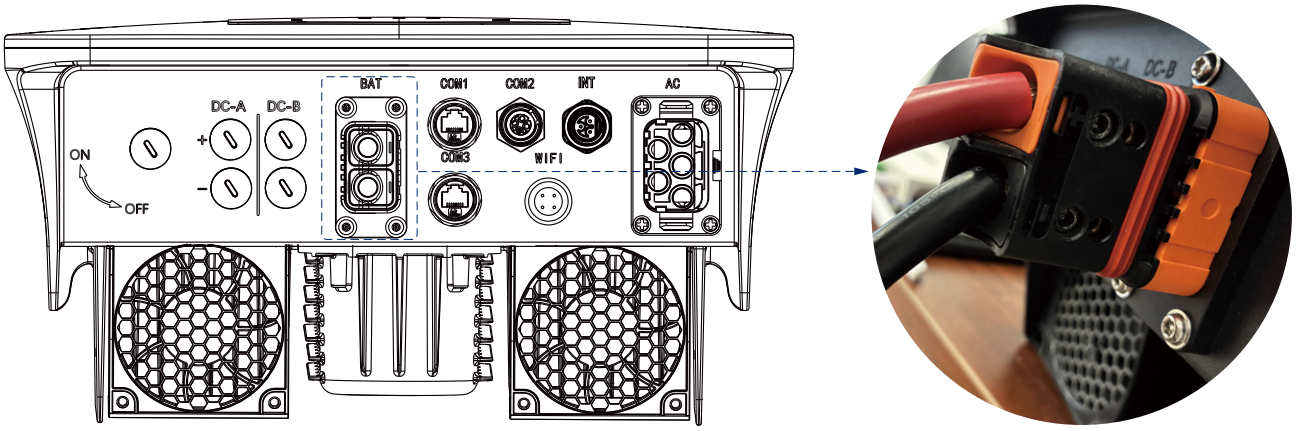


No.	COM1	COM2	COM3
1	+3_3V	CT-U	SGND
2	DRM1/5	RS485-A	TEP
3	DRM2/6	CT-N	485-A2
4	DRM3/7	RS485-B	CANH_BAT1
5	DRM4/8		CANL_BAT1
6	DRM0		485-B2
7	SELV12		BAT-485-A
8	RPSD		BAT-485-B

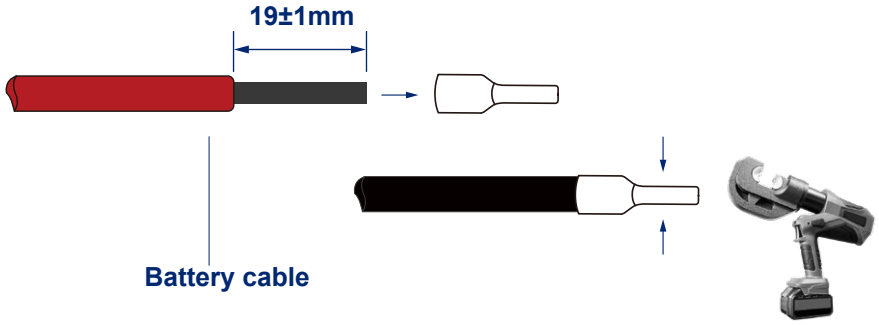
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4.4.1 Power Cable Connection Instruction

AC Coupler are compatible with lithium battery. For settings related to battery type and manufacturer, please refer to 5.3. BMS (Battery Management System) communication is needed between AC coupler and battery.



Step: 1



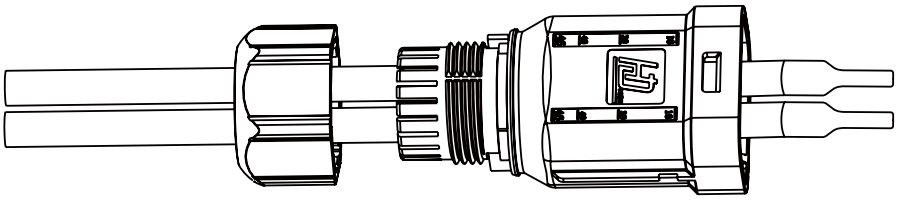
⚠ **Note:**

Battery cable suggestion Cross - section 3 AWG
Please make sure the battery polarities are correct.

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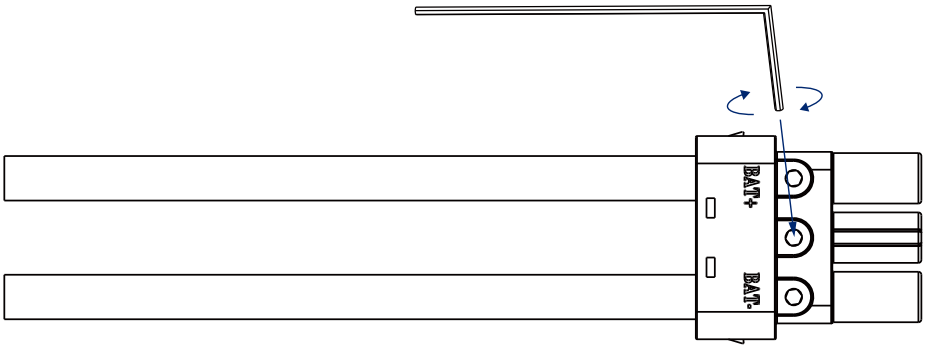
Step: 2

Pass the crimped battery harness through the waterproof connector and the cover.



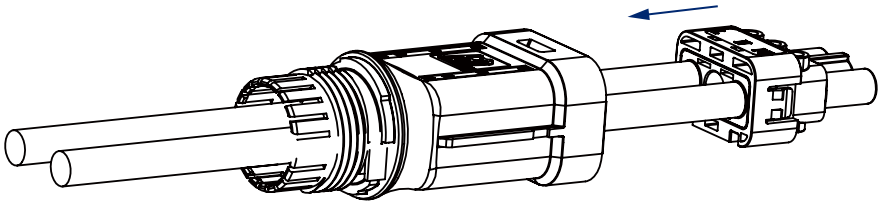
Step: 3

Insert the wire harness into the terminals according to “+” and “-” polarity, make the insulated terminals parallel with the terminals , the crimping screw torque is 2.0±0.1N.m



Step: 4

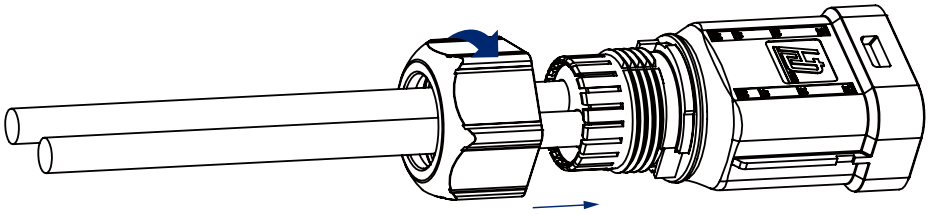
A “click” sound will be heard when the connector assembly is correct.



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Step: 5

Use an open-end wrench to tighten the waterproof lock.



⚠ **Note:**

Once the clamping nut is tightened, the nut will be locked.

Step: 6

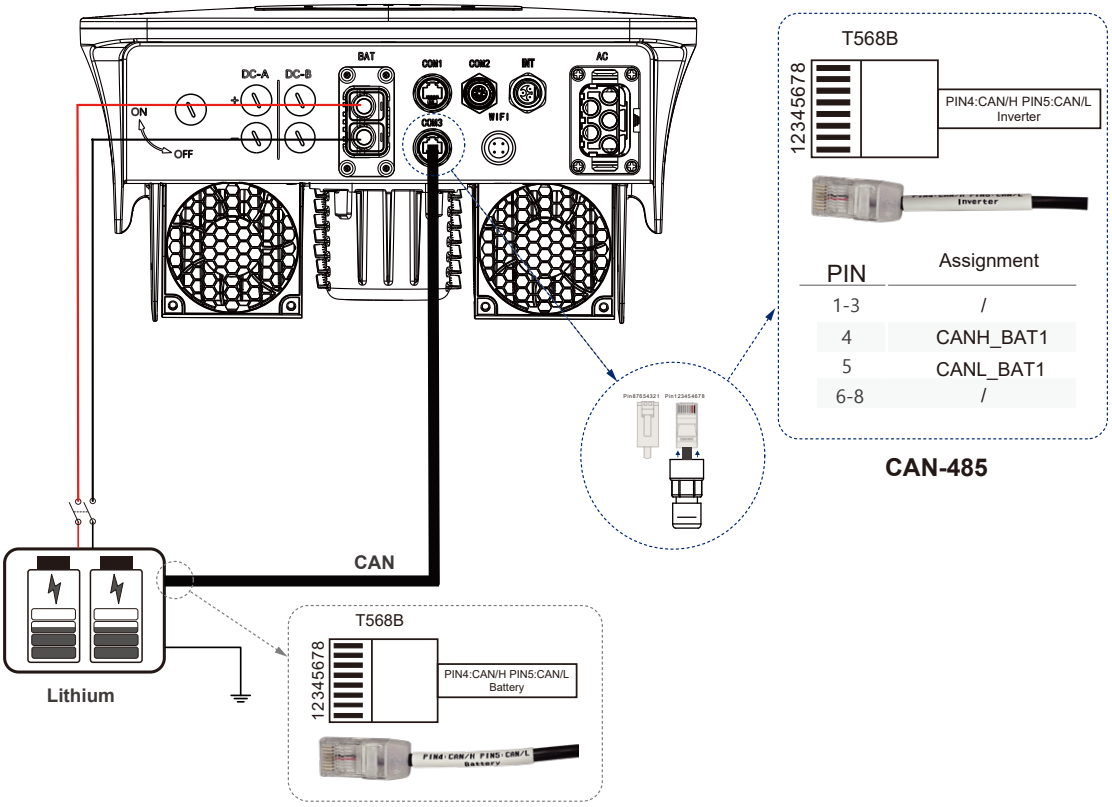
Insert the battery connector into the AC coupler, if hear a “click”, it means the battery connection is finished.



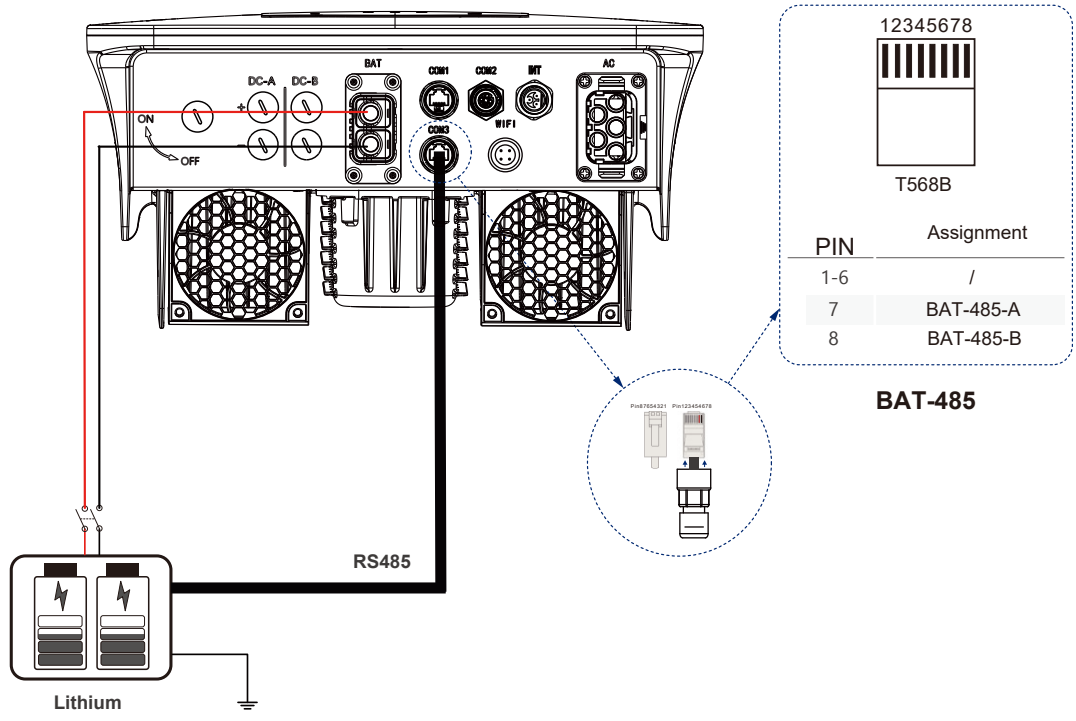
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4.4.2 Communication Cable Instruction (BAT-CAN)

This has been explained in detail previously. Please refer to section 4.3.4.3.



(BAT-RS485)



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4.4.3 Connect To Grid Instruction

The AC terminal contains “GRID” and “EPS”, GRID for load, and EPS for emergency load.

Before connecting, a separate AC breaker between individual AC coupler and AC input power is necessary. This will ensure the AC coupler be securely disconnected during maintenance and fully protected from current of AC input.

An extra AC breaker is needed for On-Grid connection to be isolated from grid when necessary. Below are requirements for the On-Grid AC-breaker.

AC coupler Model	AC breaker specification
SoWave-SL 3.6-6kW	32A/200V/230V AC breaker

⚠ **Note:**
Qualified electrician will be required for the wiring.

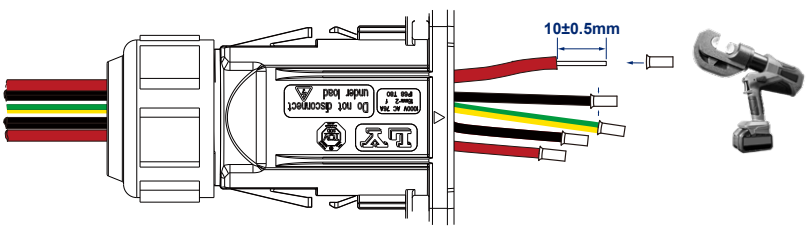
Model	Wire Size	Cable（mm²）	Torque value
3.6-6kW	8-10AWG	5.2-8.3	1.2N·m

Please follow steps for AC connection

• Connect DC protector or breaker first before connecting.

• Emove insulation sleeve 11mm(0.5 inch) length, unscrew the bolts, insert the AC input wires according to polarities indicated on the terminal block and tighten the terminal screws.

Step: 1



⚠ **Note:**
Cable suggestion
Cross-section 8-10AWG

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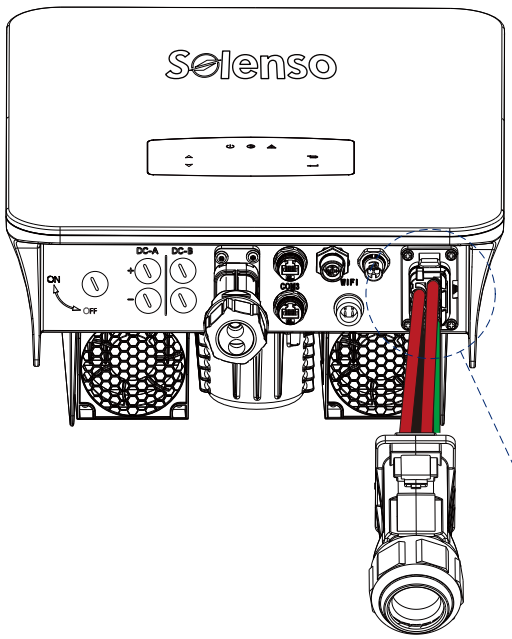
⚠ **Note:**

The wiring terminals should be wrapped with insulation tape, otherwise it will cause a short circuit and damage the AC coupler.

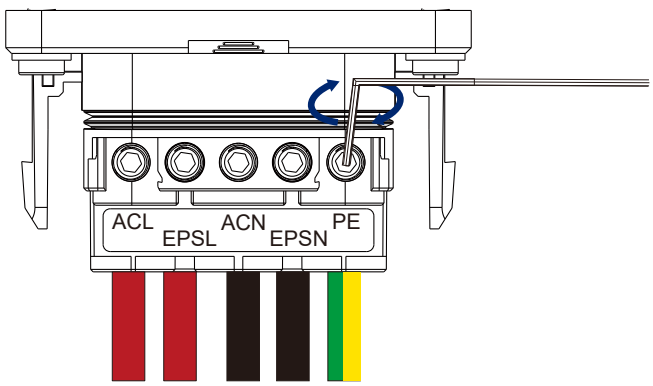
⚠ **Note:**

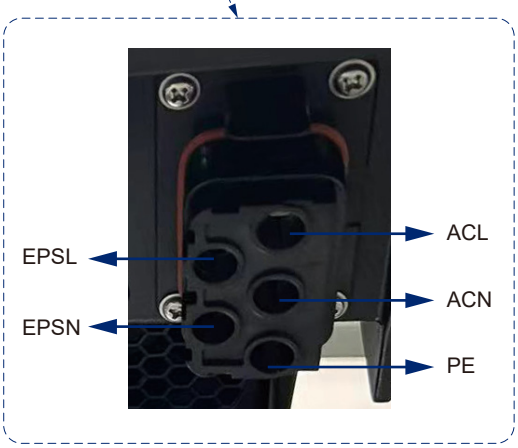
The Max. power load connects to EPS port should not exceed the AC coupler's EPS Max. output power range.

Step: 2



Step: 3

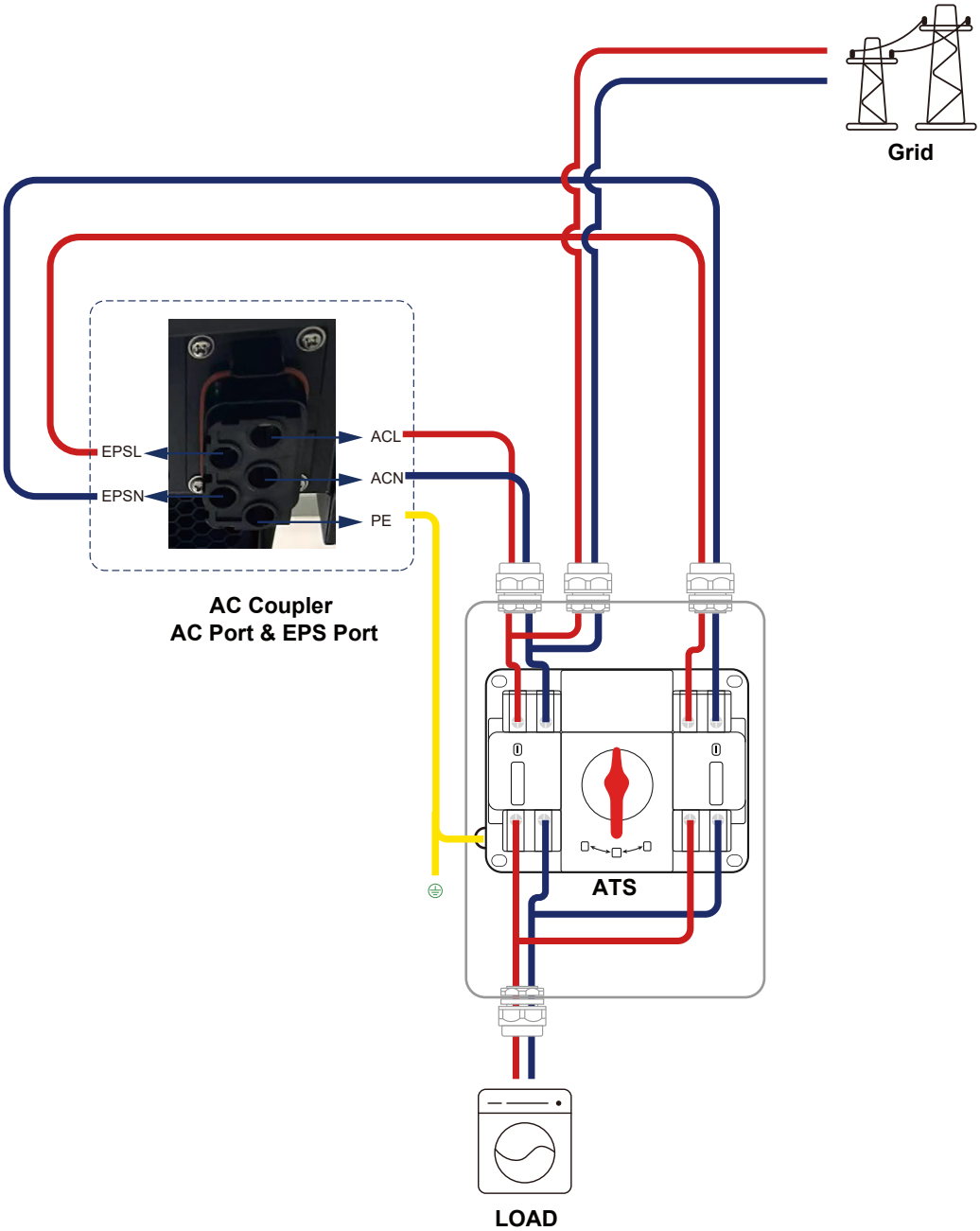




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4.4.4 EPS Connection

Installing the ATS on the EPS side of the AC coupler ensures that emergency power is supplied to the load when the grid power fails. The function of the ATS is to automatically or manually switch between two power sources to ensure continuous power supply to the load. We have ATS available for purchase if you need it.



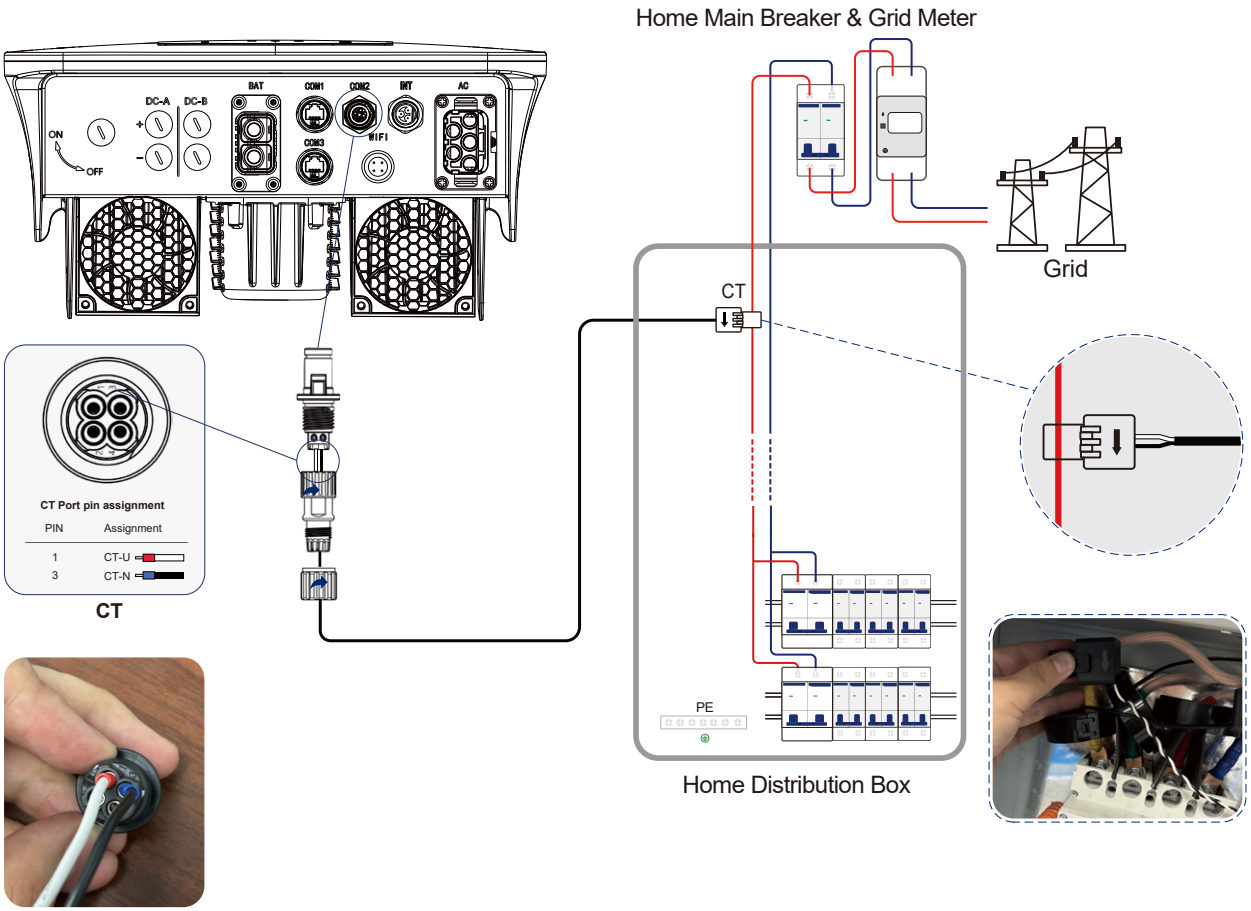
EPS stands for Emergency Power Supply. It starts and operates off-grid during a power outage, using micro-inverters and batteries to supply electricity.

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4.4.5 CT Connection

Connection are used to detect current power direction of the local load and the grid. The output control function of the AC Coupler will be activated based on the detected data.

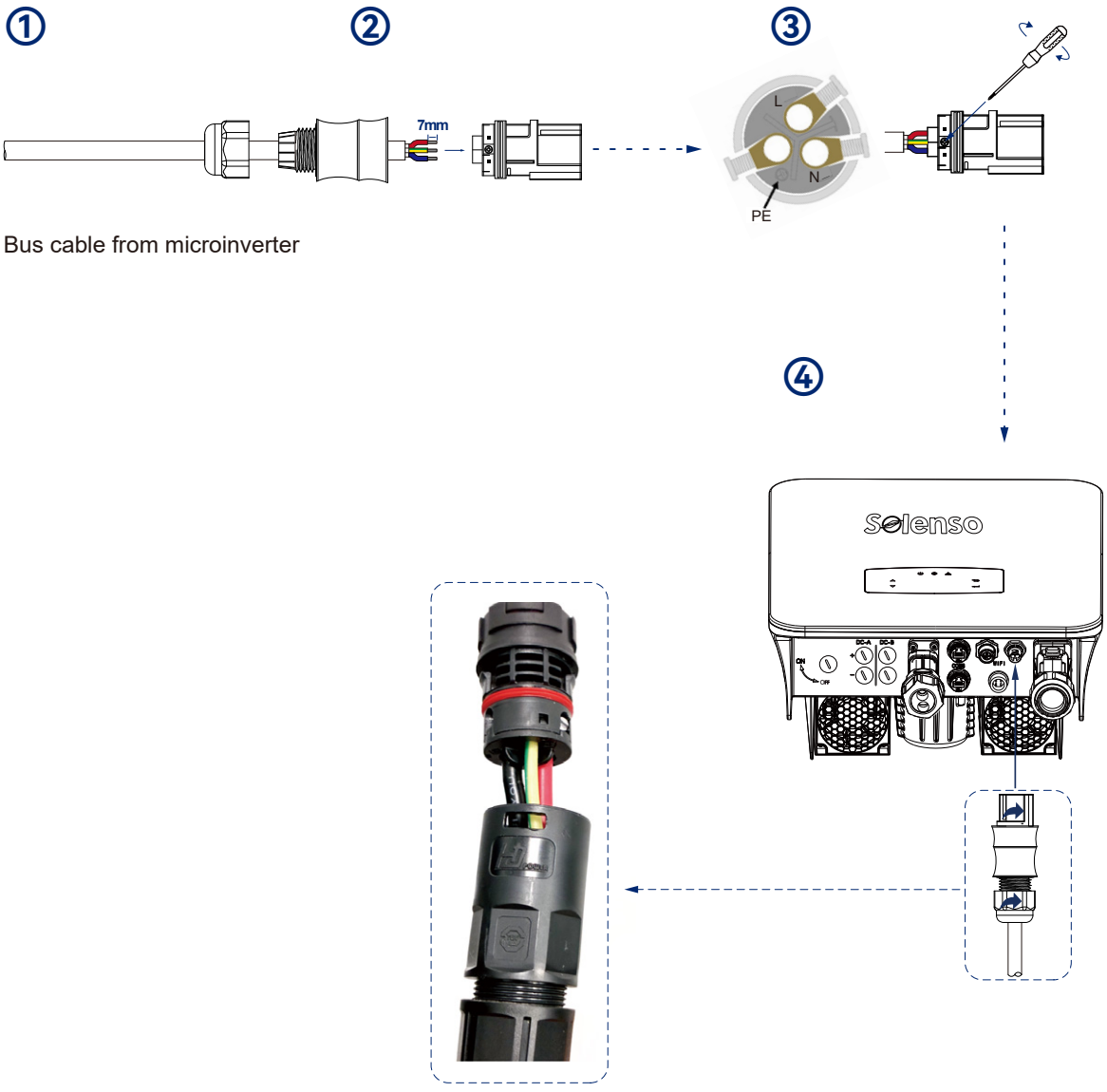
Install the CT



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4.4.6 Microinverter Connection

The INT port is used to connect the Microinverter to the AC Coupler, allowing for energy transfer. As well as giving the Microinverter an AC signal to keep it running when the grid is down.

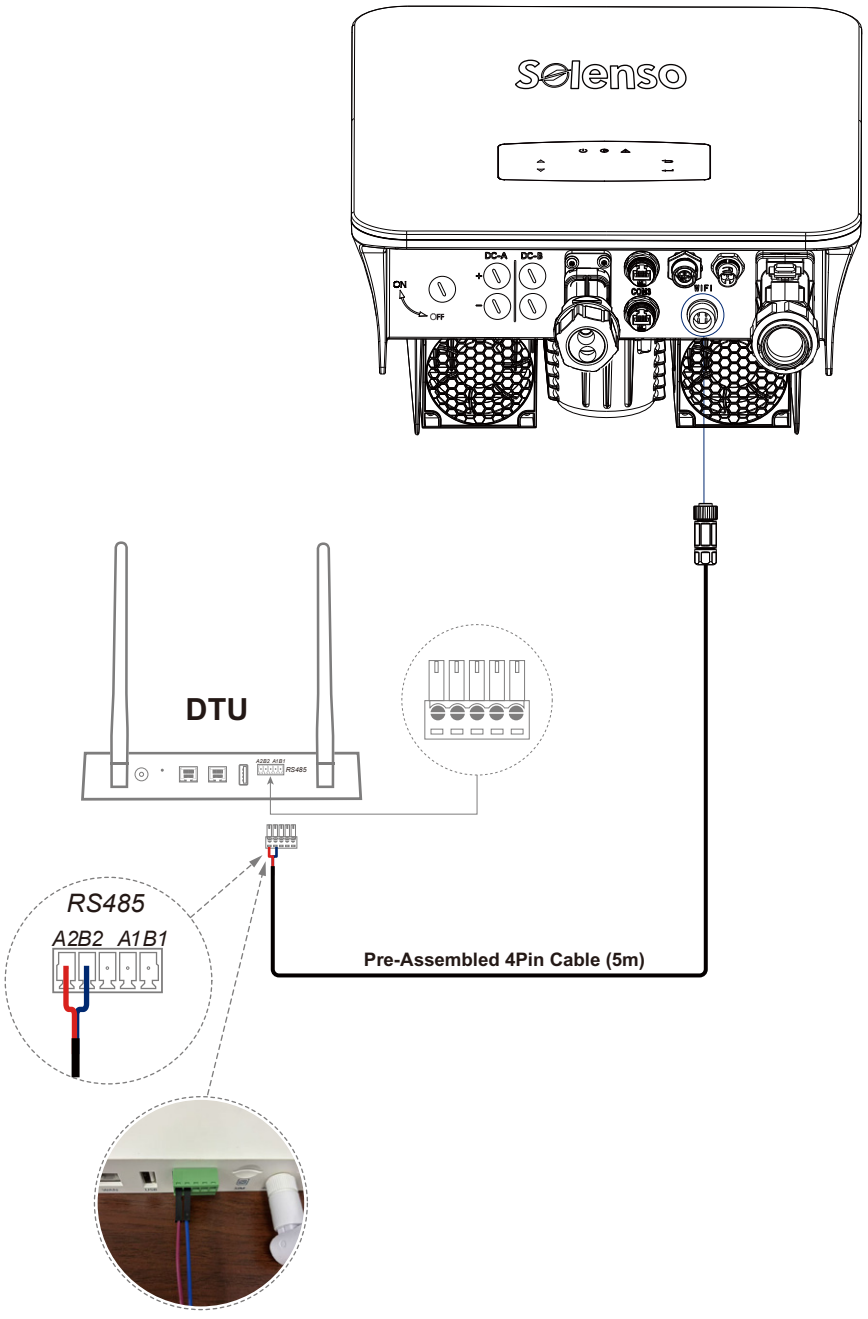


Bus cable from microinverter

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4.4.7 DTU Connection

The DTU is a key component in the Solenso system.AC coupler connect the DTU to achieve data interaction. Afterwards, you can control the whole system through APP or monitoring platform.

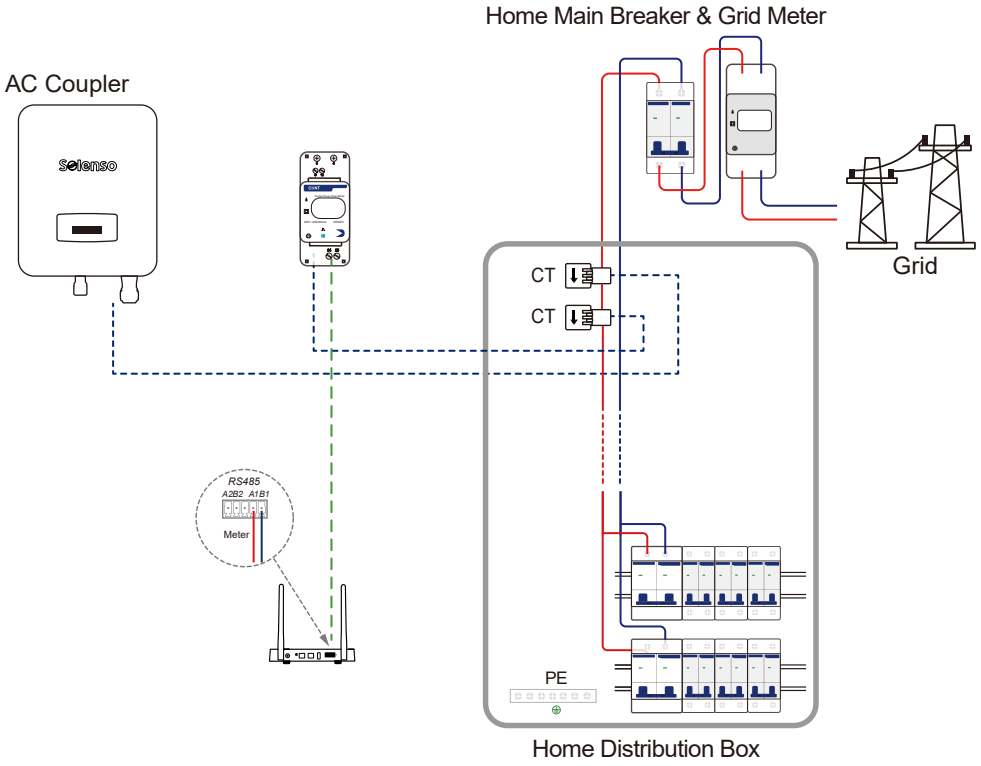


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4.4.8 Meter Connection

Meter is used to detect current direction and power of the grid side. The Export Management function of the Microinverters will be activated based on the detected data.

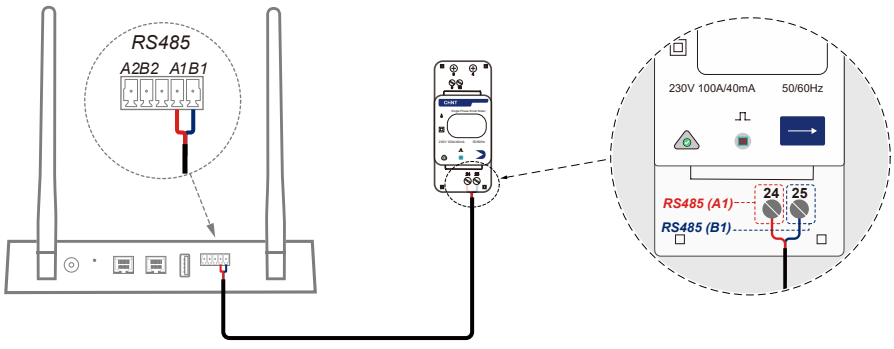
Connection of the meter and CT



⚠ Note:

The CT's direction ➞ must point away from the gird side.

Connection to DTU

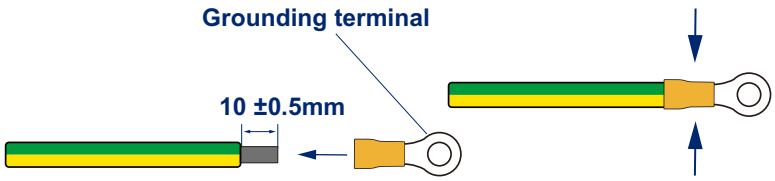


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4.4.9 Earth Connection

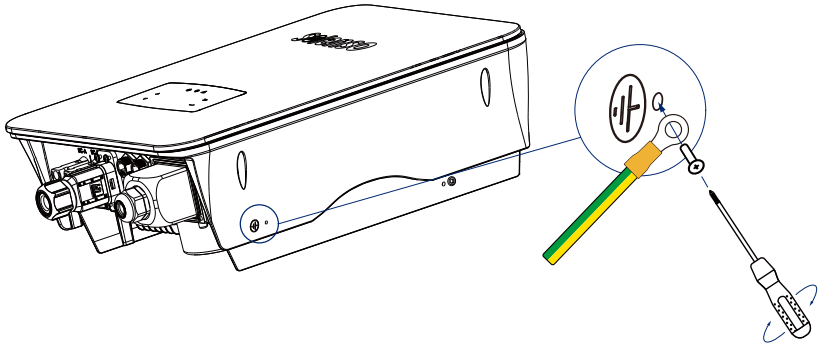
⚠ **Note:**
A second protective earth (PE) terminal should be connected to the AC Coupler.
This prevents electric shock if the original protective PE wire fails.

Step: 1



⚠ **Note:**
Earth cable PE suggestion:
Cross-section (Copper) 4-6mm² / 10AWG

Step: 2

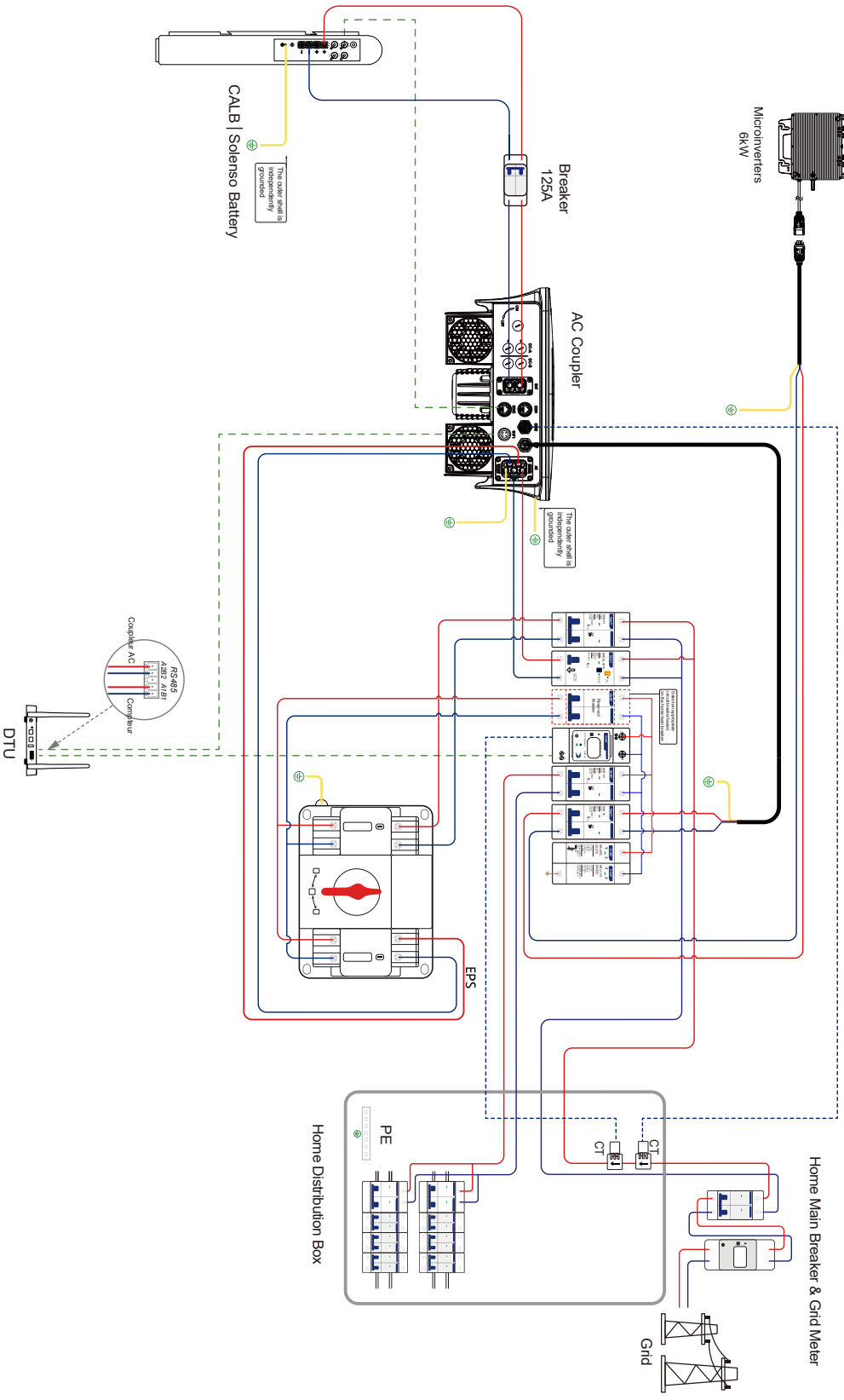


Fix the grounding screw to the grounding connection of the machine housing.

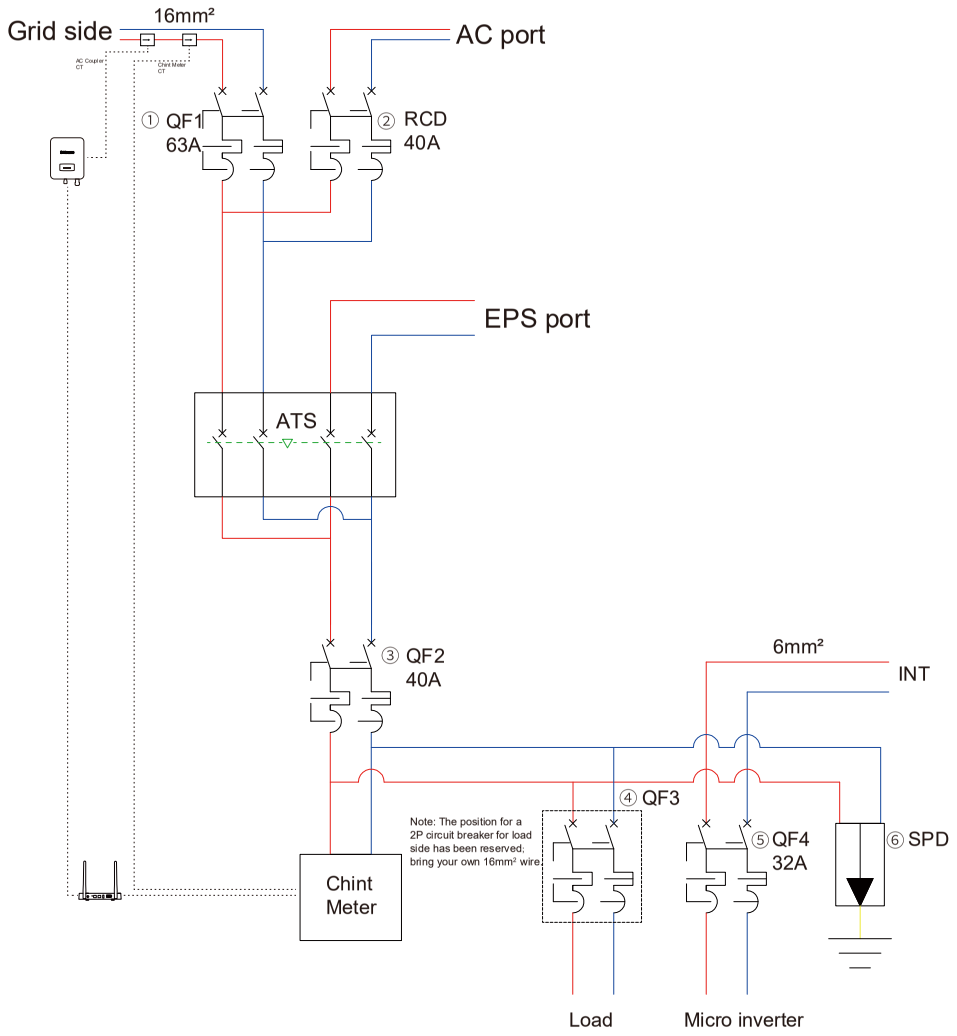
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4.5 System Wiring Configuration

1. Microinverter System (6kW) Wiring



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①	QF1-63A	Circuit Breaker	piece	1
②	RCD-40A	Residual Current Device	piece	1
③	QF2-40A	Circuit Breaker	piece	1
④	QF3 (Reserved)	Circuit Breaker	piece	1
⑤	QF4-32A	Circuit Breaker	piece	1
⑥	SPD	Surge Protection Device	piece	1
Number	Name	Electrical schematic symbols	Unit	Quantity

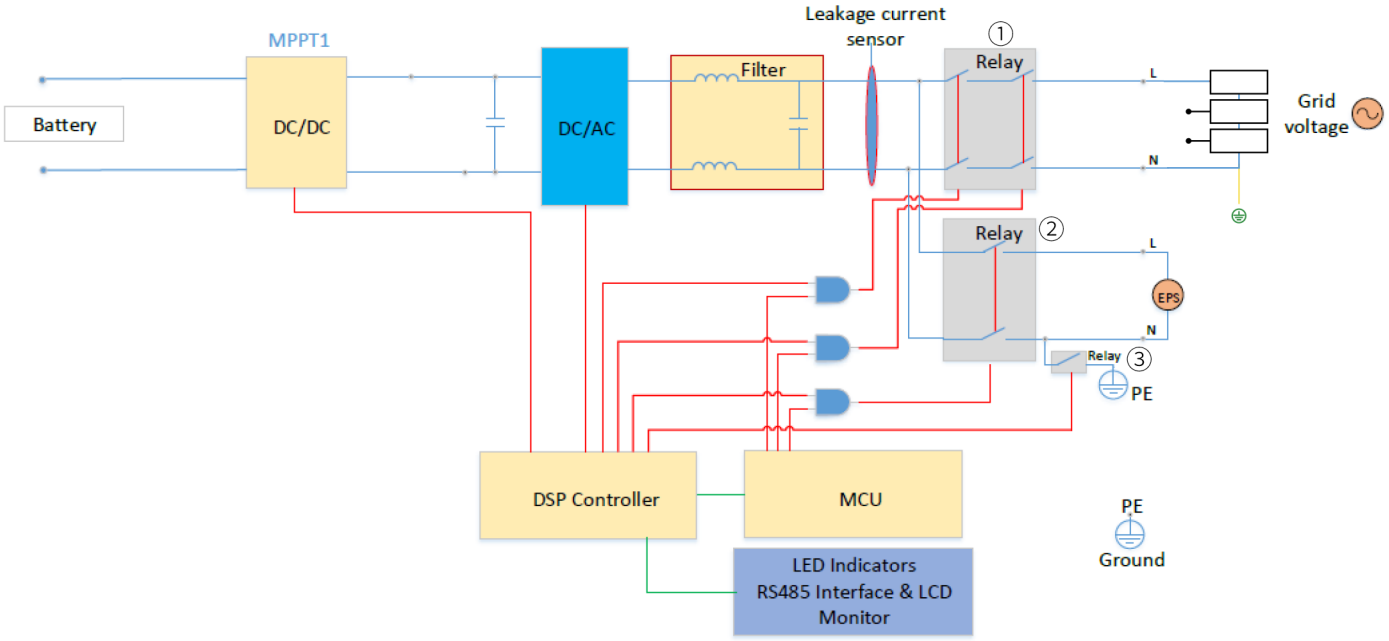
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2. Explanation of Grounding Principle

General product information:

The testing item is a AC coupler for indoor or outdoor installation.
The AC Coupler is single-phase type and non-isolated between PV, BATT and AC output.
The internal control is redundantly built. It contains a main DSP and a slave DSP.
PE terminal on external and internal enclosure.
The final used earth system shall comply with the local code requirement.

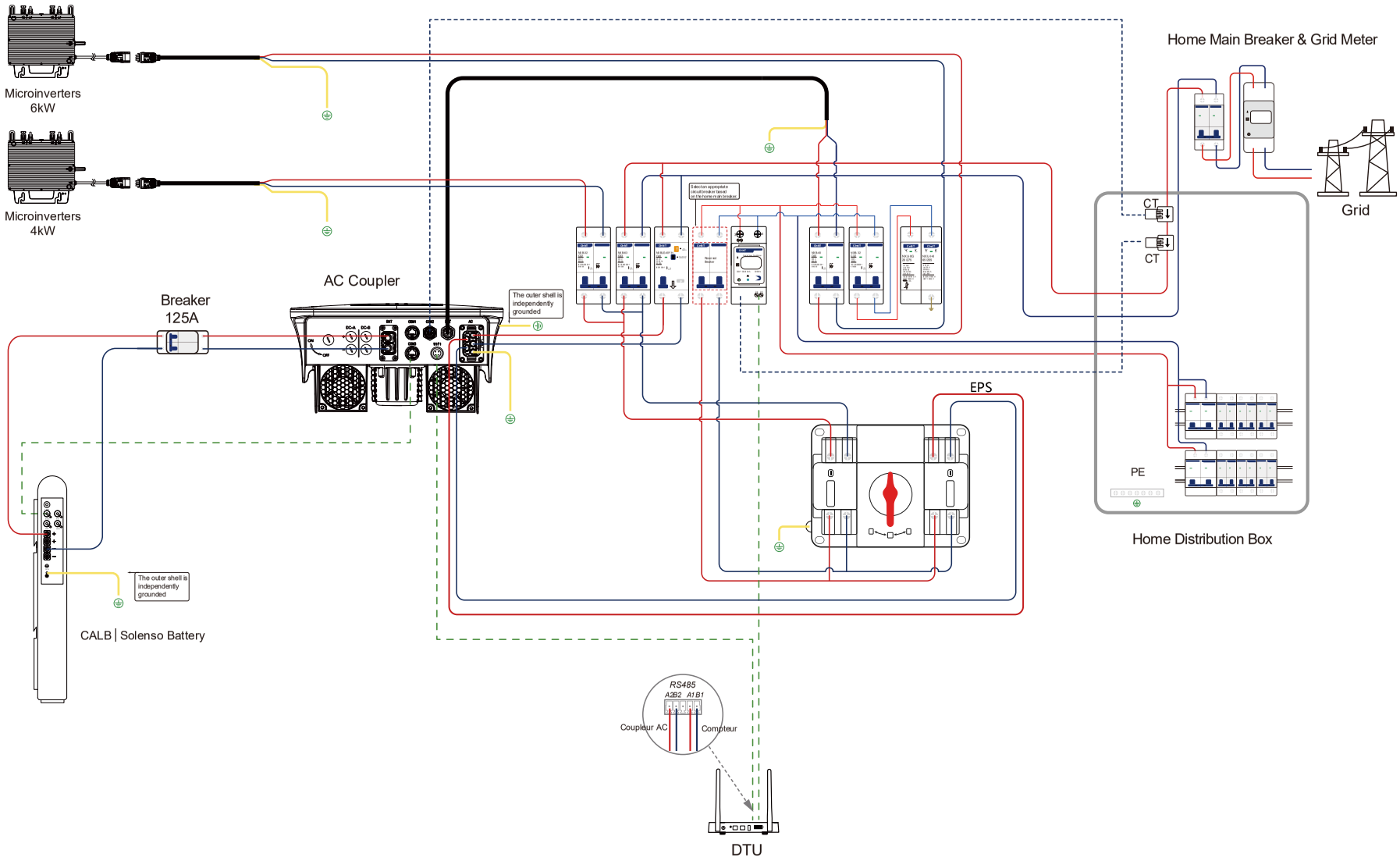
The topology diagram as following:



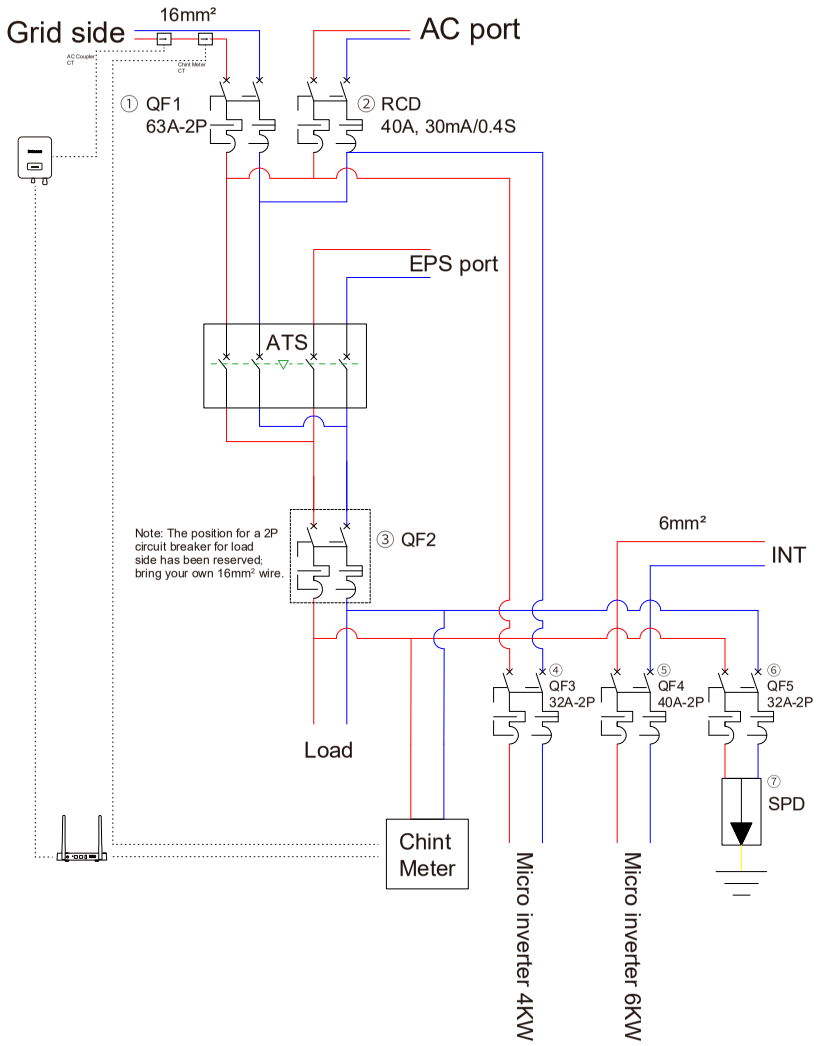
In grid-connected mode, Relay ① is activated (contacts closed), connecting the neutral (N) to the ground on the grid side, while Relays ② and ③ remain open.
In off-grid mode, Relays ② and ③ are activated (contacts closed) to bond the neutral (N) directly to the ground and maintain a safe reference potential, while Relay ① is open.

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3. Microinverter System (6+4kW) Wiring



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①	QF1-63A-2P	Circuit Breaker	piece	1
②	RCD-40A	Residual Current Device	piece	1
③	QF2 (Reserved)	Circuit Breaker	piece	1
④	QF3-32A-2P	Circuit Breaker	piece	1
⑤	QF4-40A-2P	Circuit Breaker	piece	1
⑥	QF5-32A-2P	Circuit Breaker	piece	1
⑦	SPD	Surge Protection Device	piece	1
Number	Name	Electrical schematic symbols	Unit	Quantity

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5. Add AC Coupler and Battery

This is a brief description of how to add the ac coupler and battery.

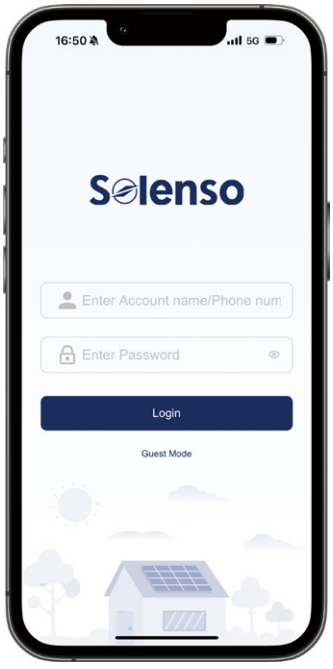
5.1 Add AC Coupler

A. Add AC Coupler to a new plant

1. Download the “Solenso Pro” App

Android IOS

2. Open the app and log in with your installer account and password. If you are a new installer, please apply for an Installer account from your distributor in advance.

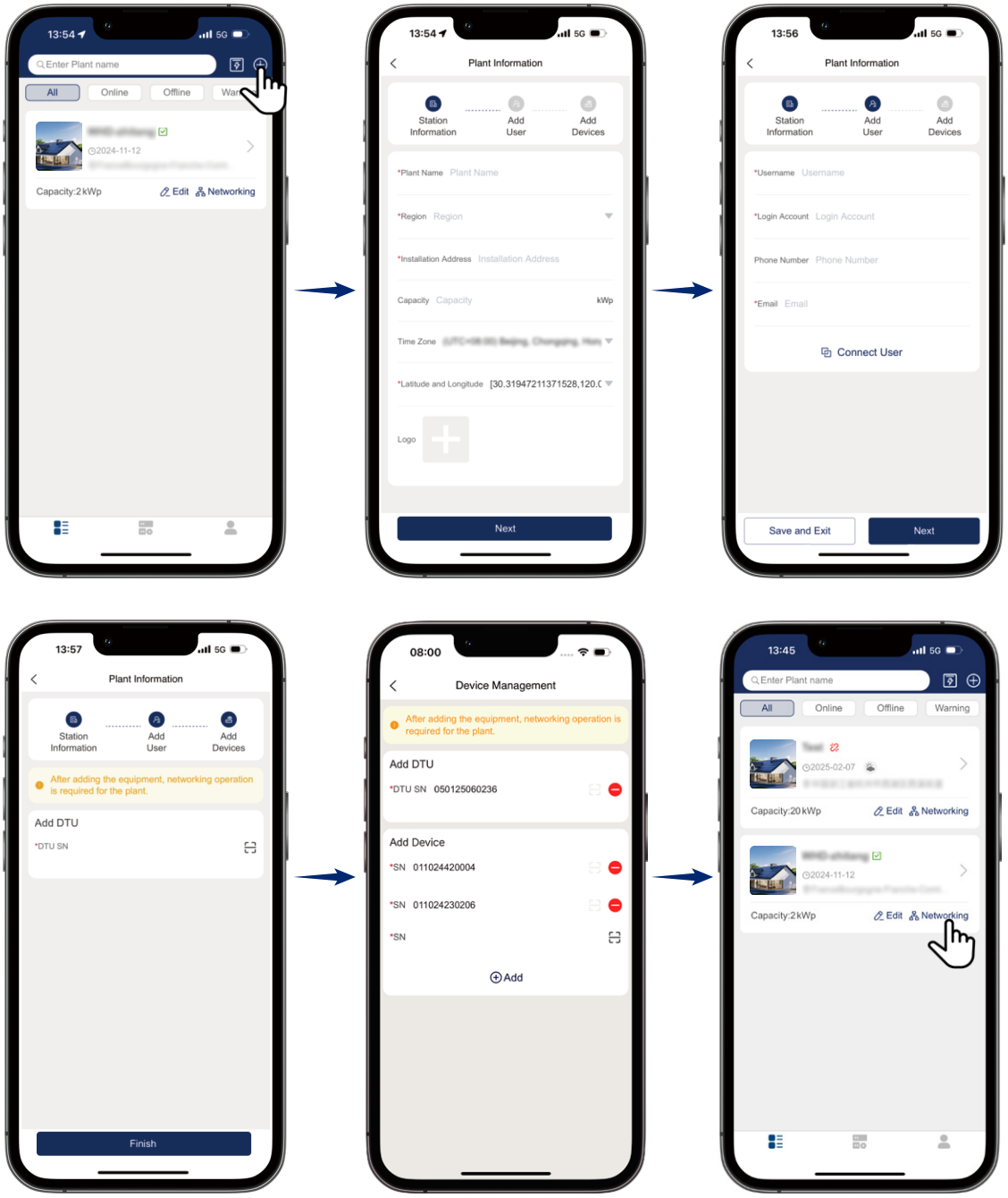


⚠ **Note:**
If you are a new installer,
please contact your distributor
or send an email to
log2solenso@solenso-global.com
for an installer account.

3. On the second page, select “ ⊕ ” on the right top side of the page to add plant. Follow the on-screen instructions to fill in the plant details and press “Next”.

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4. Add DTU, Micro inverter, AC Coupler during plant creation. For the AC Coupler, the SN is on the side nameplate.



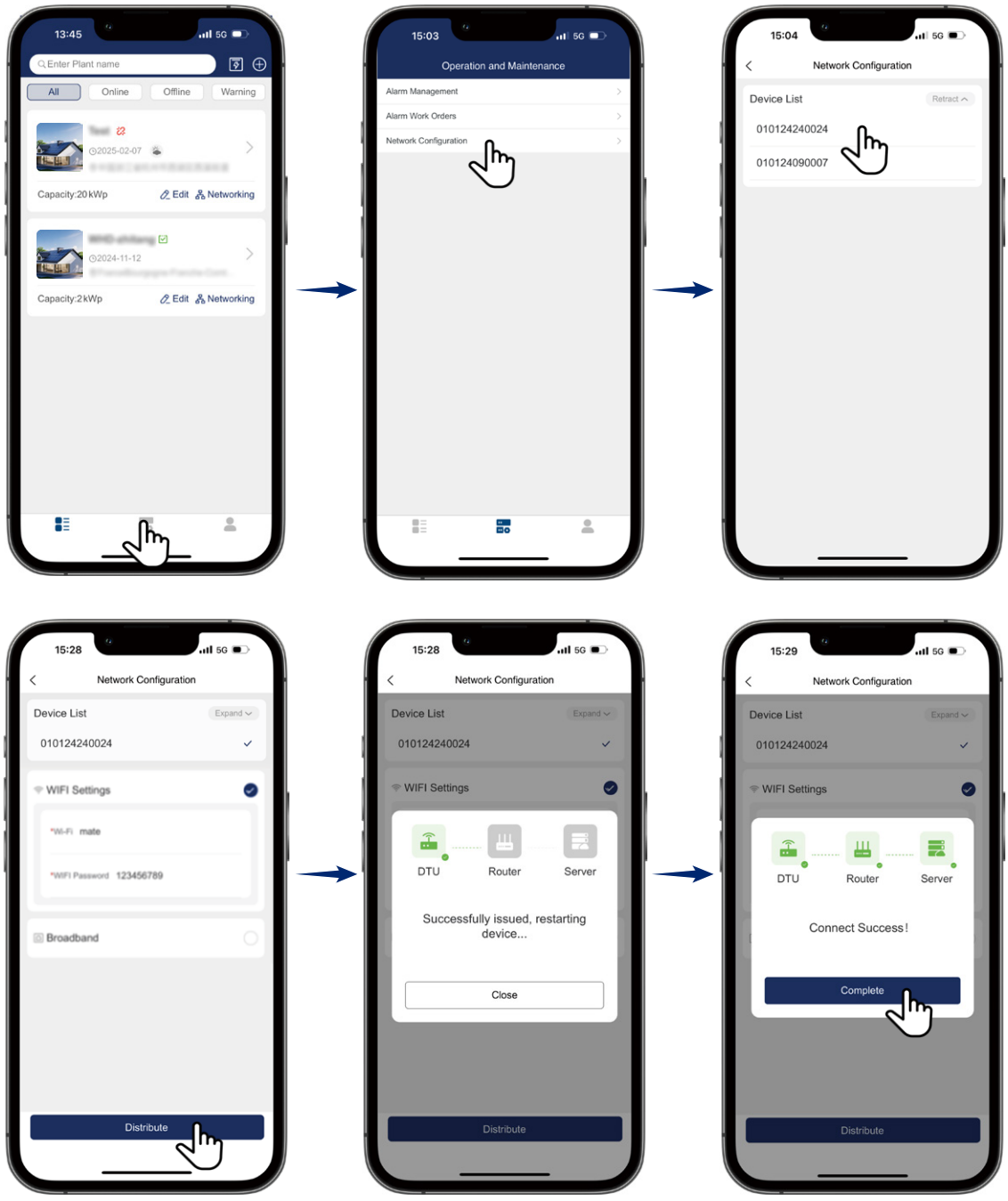
⚠ Note:

The ADD device column includes micro inverter and ac coupler.

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5. Select “Network Config” under “O&M” from the main page.

6. Choose the network configuration.
- WiFi: select the WiFi settings, enter the WiFi password and account, then click “Distribute”;
- Ethernet: insert the network cable into the DTU network port, select “Broadband”, and then click “Distribute”.

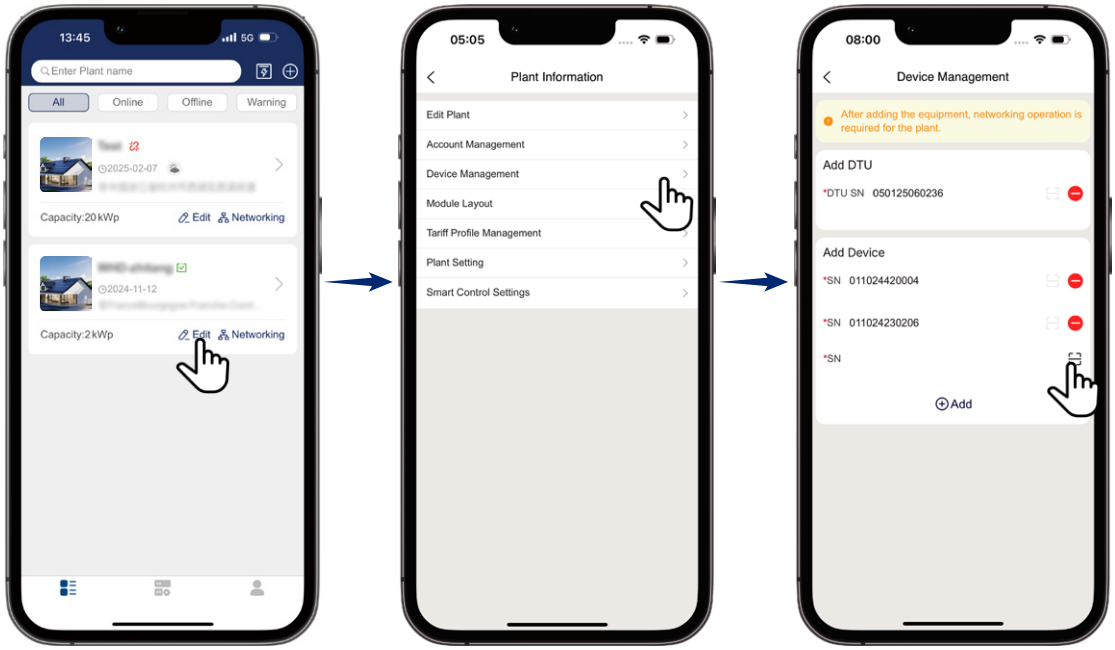


7. Then back to the plant list, find your plant and click “ Networking ”, then you will see success.

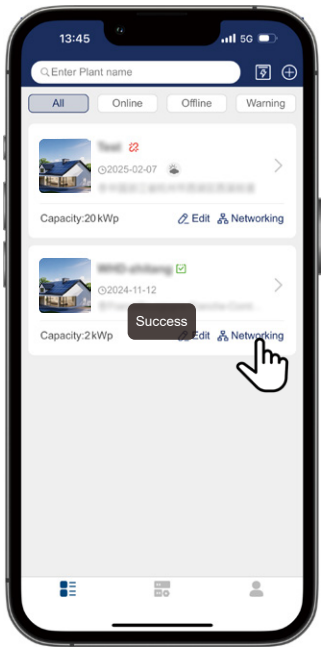
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B. Add AC Coupler to an existing plant

1. Choose the plant that you want to change, press the “Edit” button, and enter the plant edit page.



2. Click the Device Management.
3. Scan the SN of the AC Coupler to add the Device.
4. Back to the plant list,find your plant and click “ Networking ”, then you will see success.



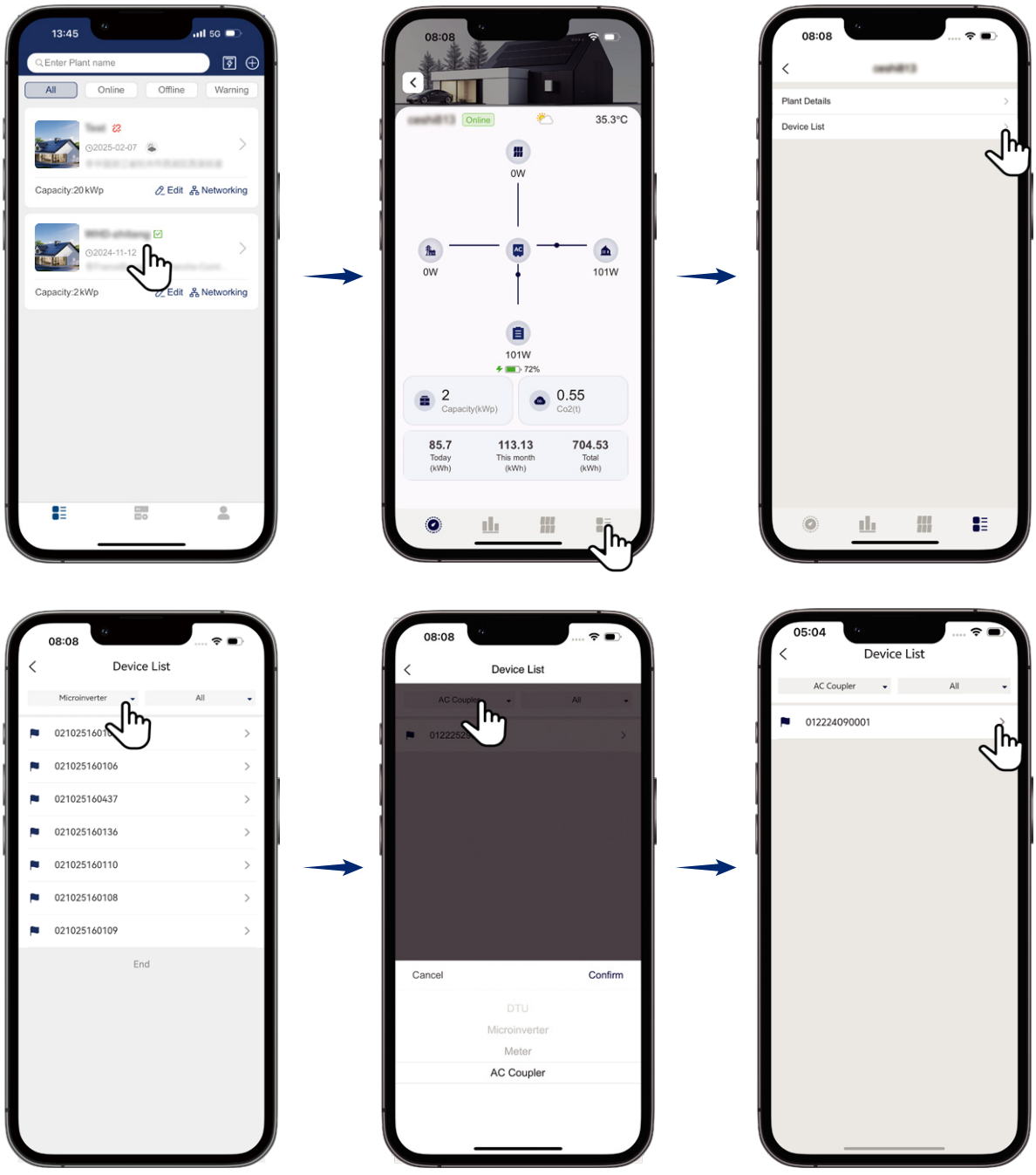
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5.2 Add Battery

⚠ **Note:**

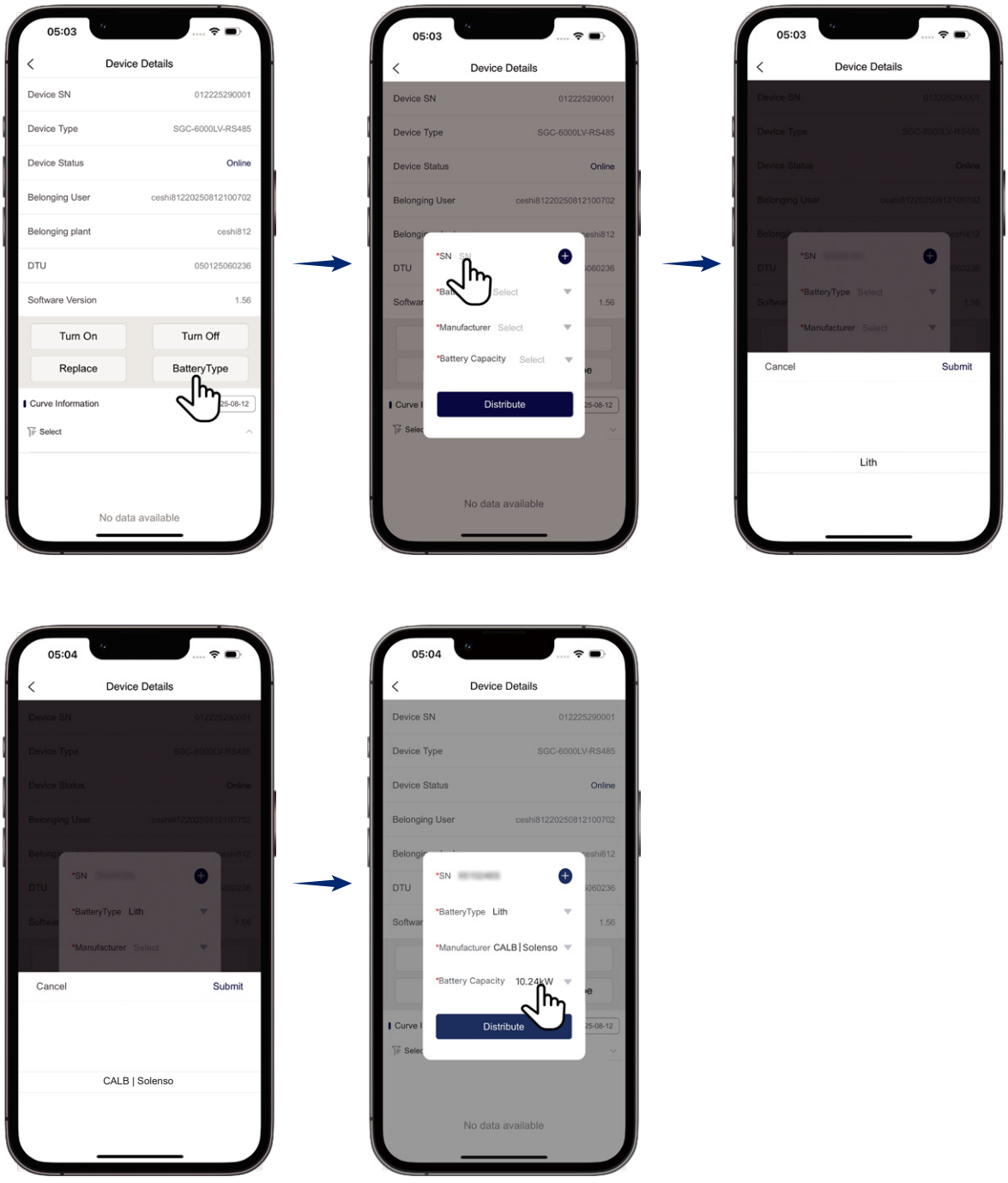
Please ensure that you have “Networking” before performing following operations.

1.Click to enter the plant. Click on the bottom right corner of the plant, and then click “Device list”.



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2. Filter out the AC Coupler, and click on the “battery type”.



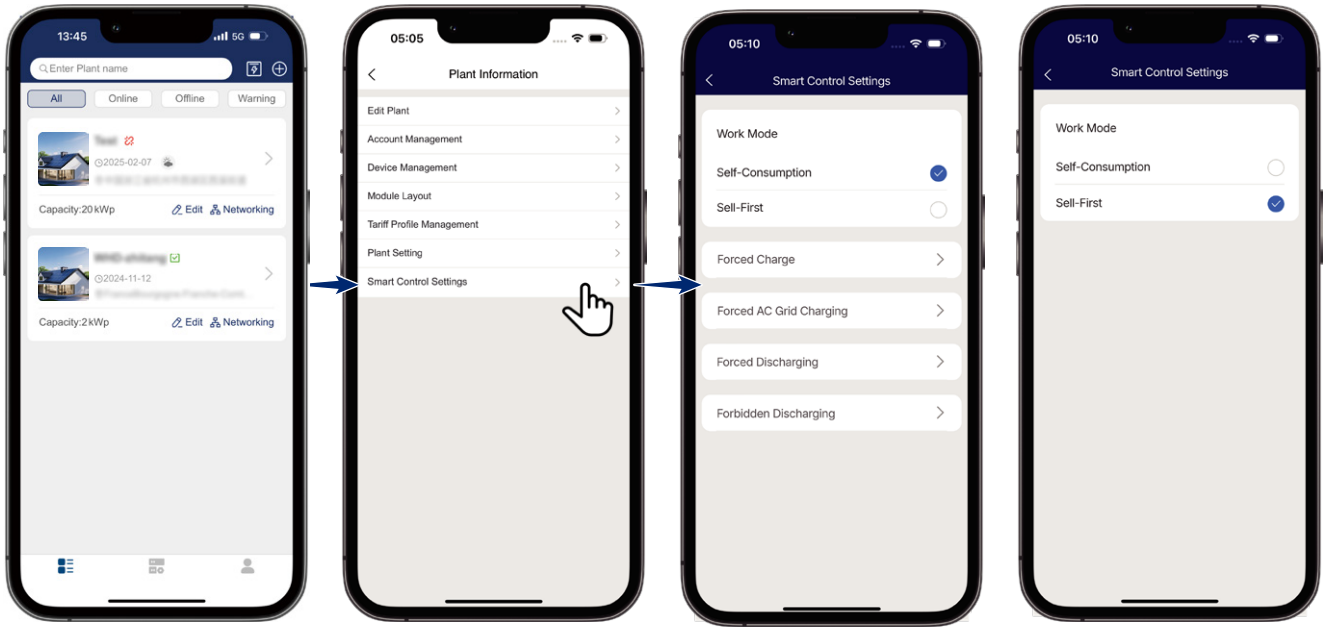
3. Enter the SN, battery type, manufacturer and battery capacity in sequence. Finally, click “distribute”.

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5.3 Set the work mode

5.3.1 Select The Work Mode

There is only one work mode available: self-consumption.



1. Choose your plant and click " Edit ".
2. Click on the Smart control setting.
3. You can choose Self-Consumption work mode.

• Self-consumption Mode (without optional setting)
In the daytime, solar energy supports the loads firstly, and surplus energy is stored in the battery. When the battery is fully charged or reaches the maximum charge power, the surplus energy is fed into grid (or limited if required). At night, the battery discharges for the loads firstly, and the grid will supply the loads once the battery power is not enough.

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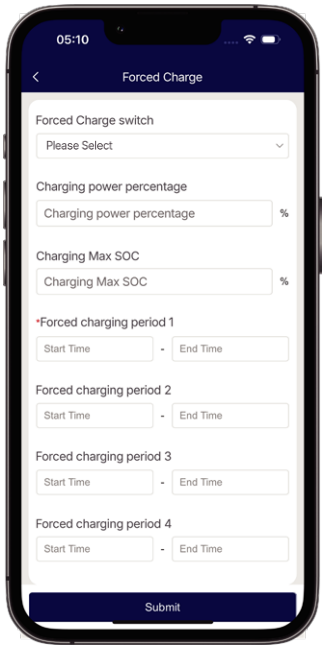
5.3.2 Optional Settings

Self-Consumption mode also has extra optional setting.The four optional settings can be set separately, They can also be set simultaneously, but the time period should not be repeated.

a) Forced Charge

Parameters	Setting Instructions	Scope
Forced charge switch	Set the Forced charge turn on or turn off.	• Turn on • Turn off
Charging power percentage	Set the Charging power percentage. Please set the Charging power percentage appropriately, as this will affect the battery life. We recommend set it to 95%.	[1%,100%]
Charging Max SOC	Set the charging cutoff capacity.	90%~100%
Forced charging period (1~4)	Set the Forced charging period.	Any time period within the 24-hour period
Example	During the period from 12:00 to 14:00 in the afternoon, the PV generation of electricity is abundant. At this time, we force the PV to charge our batteries. The priority of the load and the feeder network will then decrease.	

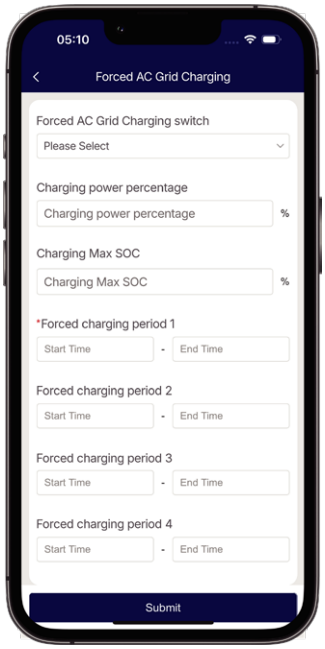
If you want to enable this function, you should set at least one time period.



b) Forced AC Grid Charging

Parameters	Setting Instructions	Scope
Forced AC Grid Charging switch	Set the Forced AC Grid Charging turn on or turn off.	• Turn on • Turn off
Charging power percentage	Set the Charging power percentage. Please set the Charging power percentage appropriately, as this will affect the battery life. We recommend set it to 95%.	[1%,100%]
Charging Max SOC	Set the charging cutoff capacity.	90%~100%
Forced charging period (1~4)	Set the Forced charging period.	Any time period within the 24-hour period
Example	From 1:00 to 3:00, the electricity price is low. At this time, the power grid is forced to charge our batteries.	

If you want to enable this function, you should set at least one time period.



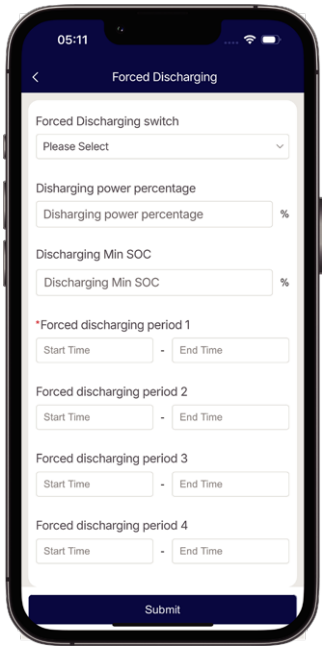
⚠ **Note:**

If a and b are accidentally set at the same time, b will take priority.

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c) Forced Discharging

Parameters	Setting Instructions	Scope
Forced Discharging switch	Set the Forced Discharging turn on or turn off.	• Turn on • Turn off
Discharging power percentage	Set the Discharging power percentage. Please set the Discharging power percentage appropriately, as this will affect the battery life. We recommend set it to 95%.	[1%,100%]
Discharging Min SOC	Set the discharge cutoff 85pacity. When the battery's SOC drops to 0%, it is necessary to recharge promptly; failure to do so will result in irreversible degradation of the battery capacity. Any battery failure caused by this will not be covered by the warranty. It is recommended to avoid setting the "Discharging Min SOC" of the battery to 0 as much as possible.	0%~20%
Forced Discharging period (1~4)	Set the Forced Discharging period.	Any time period within the 24-hour period
Example	During the peak usage period from 17:00 to 21:00, but at this time, the PV power generation is no longer sufficient to meet our load requirements. Therefore, the battery discharge will be prioritized, and the priority of drawing power from the grid will be reduced.	



If you want to enable this function, you should set at least one time period.

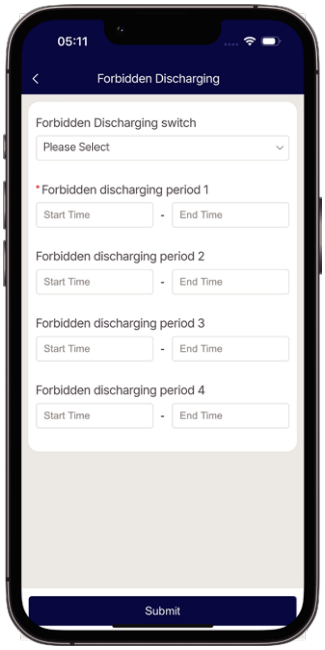
⚠ **Note:**

If a, b and c are accidentally set at the same time, b will take priority, followed by a, and c will not work.

d) Forbidden Discharging

Parameters	Setting Instructions	Scope
Forbidden Discharging switch	Set the Forbidden Discharging turn on or turn off.	• Turn on • Turn off
Forbidden Discharging period (1~4)	Set the Forbidden Discharging period.	Any time period within the 24-hour period
Example	From 15:00 to 17:00, I hope that when I get home, the battery will have sufficient power to be used. Therefore, I set it so that no power loss is allowed during this period.	

If you want to enable this function, you should set at least one time period.



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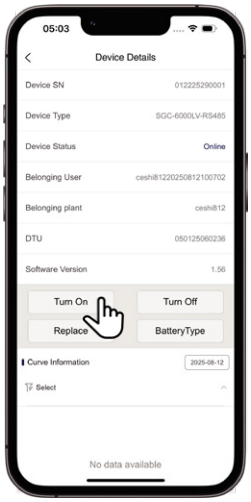
6. Power ON/OFF

Please check the following requirements before testing:

- Installation location is suitable according to Chapter 4.1.3.
- All electrical wires are connected tightly, including Microinverter, battery and AC side(Such as the grid side, EPS side, INT).
- Earth line and Smart meter/CT line are connected.
- AC Coupler should be set according to the required local grid standard.
- More information please contact with Solenso or distributors.

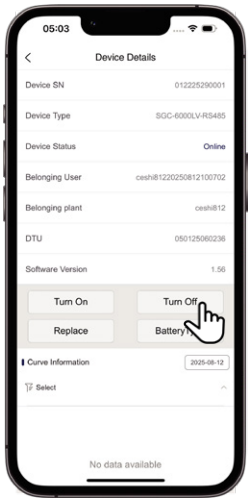
6.1 Power ON

- After LCD lighting, AC Coupler should be set following Chapter 5.1 at the first time.
- You can turn on the AC coupler at the position shown on the right side of Solenso pro.
- When AC Coupler running under normal mode, Running indicator will light up.



6.2 Power OFF

- Turn off all extra-breaker.
- You can turn off the AC coupler at the position shown on the right side of Solenso pro.



⚠ **Note:**

AC Coupler should be restarted after 5 minutes.

6.3 Restart

Restart AC coupler, please follow steps as below:

- Shutdown the AC coupler Ref. to Chapter6.2.
- Start the AC coupler Ref. to Chapter 6.1.

7. Maintenance & Trouble Shooting

7.1 Maintenance

Periodically maintenance are necessary, please follow steps as below.

- AC connection(Grid and EPS) : twice a year
- Battery connection: twice a year
- Earth connection: twice a year
- Heat sink: clean with dry towel once a year

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7.2 Trouble Shooting

The fault messages are displayed when fault occurs, please check trouble shooting table and find related solutions.

Type of Fault	Code	Name	Description	Recommend Solution
Off-grid Fault	D01	UpsOverPowerFault	0ff-grid load over	• Reduce loads. • If sometimes overload, it can be ignored, when generation power enough can be recovery. • If those faults occurs continuously and frequently, please ask help for local distributors.
	D02	GridConflictFault	Grid connected to Back-up terminal	• Check the off-grid port connection correct, disconnect both off-grid and grid ports.
	D03	GenOverVoltFault	GenOverVoltFault	• Adjust generator running parameters, make the output voltage, frequency in allowed range. • If this fault occurs continuously and frequently, please ask help for local distributors.
	D04	GenUnderVoltFault	GenUnderVoltFault	
	D05	GenOverFreqFault	GenOverFreqFault	
	D06	GenUnderFreqFault	GenUnderFreqFault	
DC Fault	E01	Pv1HwOverCurrFault	PV current over, triggered by hardware protection circuit	• Power off, then restart (Ref. Chapter6). • If those faults occurs continuously and frequently, please ask help for local distributors.
	E02	Pv2HwOverCurrFault		
	E03	Pv3HwOverCurrFault		
	E04	Pv4HwOverCurrFault		
	E05	Pv5HwOverCurrFault		
	E06	Pv6HwOverCurrFault		
	E07	Pv7HwOverCurrFault		
	E08	Pv8HwOverCurrFault		
	E09	Pv9HwOverCurrFault		
	E10	Pv10HwOverCurrFault		
	E11	Pv11HwOverCurrFault		

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8. Specifications

Model	SoWave-SL3.6	SoWave-SL4.6	SoWave-SL5	SoWave-SL6
Battery Port				
Max. Charge/Discharge Power (kW)	3.6	4.6	5.0	6.0
Max. Charge/Discharge Current (A)	80	120	120	120
Battery Normal Voltage (V)	51.2			
Battery Voltage Range (V)	40-60			
Battery Type	Li-ion/lead-acid etc.			
AC Grid				
Max Continuous Current (A)	17.0	22.0	23.0	28.0
Max Continuous Power (kVA)	3.6	4.6	5.0	6.0
Nominal Grid Current (A)	16.4/15.7	21.0/20.0	22.8/21.8	27.3/26.1
Nominal Grid Voltage (V)	198 to 242 @ 220 / 207 to 253 @ 230			
Nominal Grid Frequency (Hz)	50/60			
Power Factor	0.999 (Adjustable from 0.8 overexcited to 0.8 underexcited)			
Current THD (%)	<3			
AC Load Output				
Max Continuous Current (A)	17.0	22.0	23.0	28.0
Max Continuous Power (kVA)	3.6	4.6	5.0	6.0
Max Peak Current (A) (10min)	24.6/23.5	31.4/30.0	34.1/32.7	41.0/39.2
Max Peak Power (kVA) (10min)	5.4	6.9	7.5	9.0
Nominal Ac Voltage L-N (V)	220 / 230			
Nominal AC Frequency (Hz)	50/60			
Switching Time (ms)	Seamless			
Voltage THD (%)	<3			
Efficiency				
Max. Efficiency (%)	97.6			
Bat. between AC Efficiency (%)	96.8			
Protection				
Over Current/Voltage Protection	Yes			
Anti-Islanding Protection	Yes			
AC Short Circuit Protection	Yes			
Residual Current Detection	Yes			
Ground Fault Monitoring	Yes			
Insulation Resister Detection	Yes			
Enclosure Protect Level	IP65/NEMA4X			
General Data				
Dimensions (W*H*D, mm)	370*535*192			
Weight (kg)	18.5	20.5		
Topology	Tranformerless			
Cooling	Intelligent Fan			
Relative Humidity	0-100 %			
Operating Temperature Range (°C)	-25 to 60			
Operating Altitude (m)	<4000			
Standby Consumption (W)	<10			
Mounting	Wall Bracket			
Communication with RSD	SUNSPEC			
Display & Communication Interfaces	LCD, LED, RS485, CAN, Wi-Fi, GPRS, 4G			
Certifications				
Certification	IEC62109-1, IEC62109-2			
Approvals	EN50549-1, EN50549-10, C10/C11,			
EMC	EN61000-6-2, EN61000-6-3			

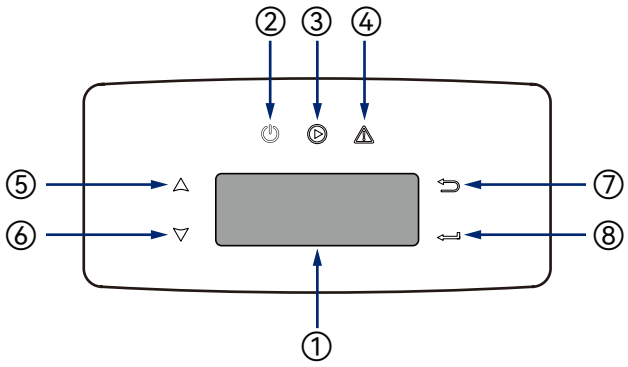
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Appendix:

Control Panel Operating Instructions

All the operations of the control panel can be realised on Solenso Pro App, the following instructions are only for back-up reference.

1. Control Panel



No.	Items	No.	Items
1	LCD Display	5	**UP** Touch Button
2	**POWER** LED Indicator	6	**DOWN** Touch Button
3	**GRID** LED Indicator	7	**BACK** Touch Button
4	**FAULT** LED Indicator	8	**ENTER** Touch Button

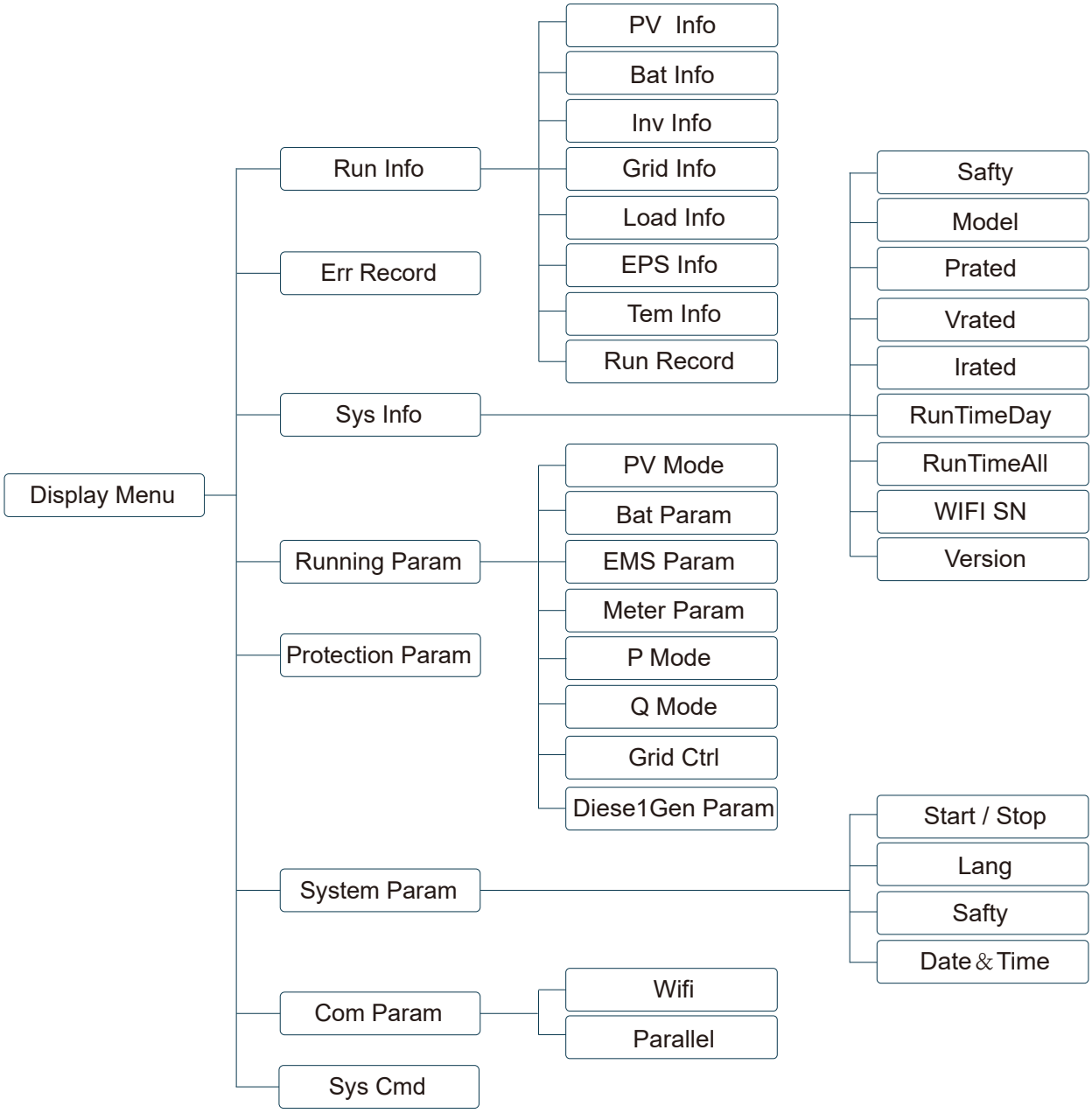
⚠ **Note:**
Hold UP/DOWN button can be rolling quickly.

Sign	Power	Color	Explanation
POWER	ON	Green	The AC Coupler is stand-by
	OFF		The AC Coupler is power off
GRID	ON	Green	The AC Coupler is feeding power
	OFF		The AC Coupler is not feeding power
FAULT	ON	Red	Fault occurred
	OFF		No fault

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2. Menu Overview

AC Coupler has a LCD for clearly operating, and menu of the LCD can be presented as following:

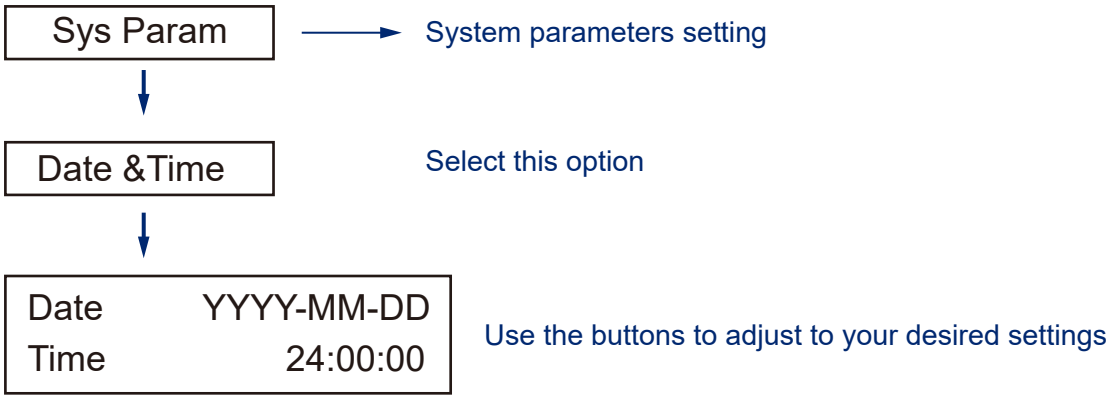


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3. Control Panel Setting

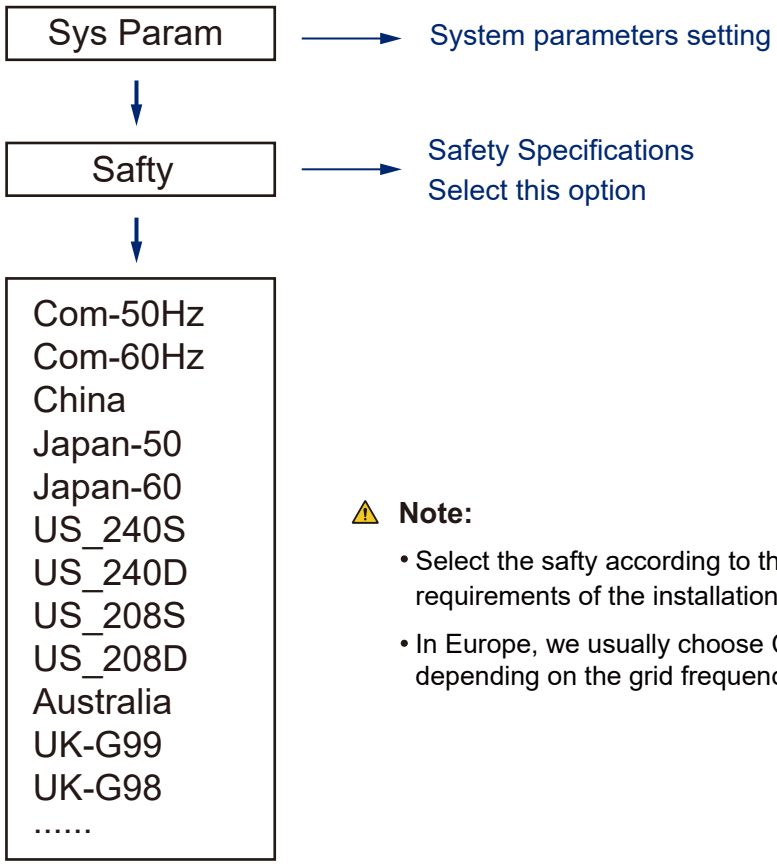
3.1 Time & Date

This option allows you to set the time and date of the AC Coupler.



3.2 Safety

This option is set by default and does not need to be changed unless necessary.



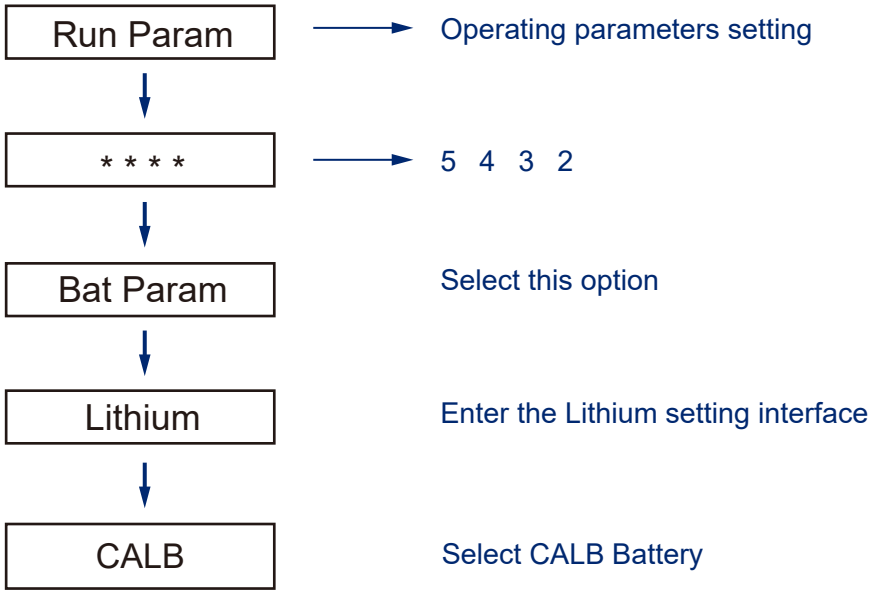
⚠ **Note:**

- Select the safty according to the requirements of the installation site.
- In Europe, we usually choose Com-50Hz and Com-60Hz, depending on the grid frequency of your country or region.

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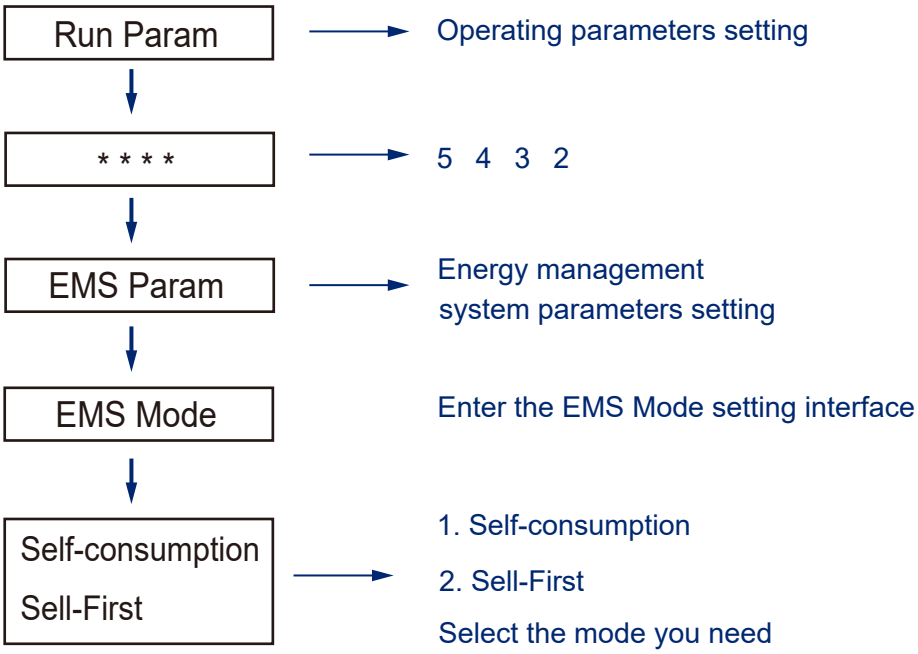
3.3 Lithium Battery

This option is configured to CALB by default at the factory and does not need to be done again.



3.4 Work Mode Setting

In this interface, you can set the AC Coupler work mode.



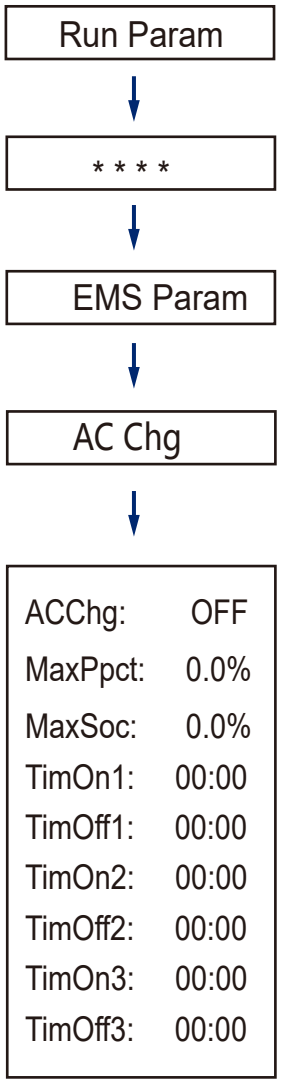
⚠ **Note:**

For detailed introduction of each mode, please refer to chapter 3.2 of the user manual.

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3.5 Forced AC Grid Charging

In this interface, you can set the AC charging settings and customise the time period for turning it on and off.



→ Operating parameters setting

→ 5432

→ Energy management system parameters setting

→ Forced AC grid charging

Enter the forced AC grid charging setting interface

1. ACChg — Forced AC grid charging enable

This option controls whether or not to turn on AC grid charging.

2. MaxPpct — Forced AC grid charging Percentage

This option controls the percentage of charging power from the AC grid.

→ 3. MaxSoc — Forced AC grid charging maximum SOC

This option controls the percentage of maximum SOC (State of Charge) of the battery.

4. TimOff1 — Forced AC grid charging start time1

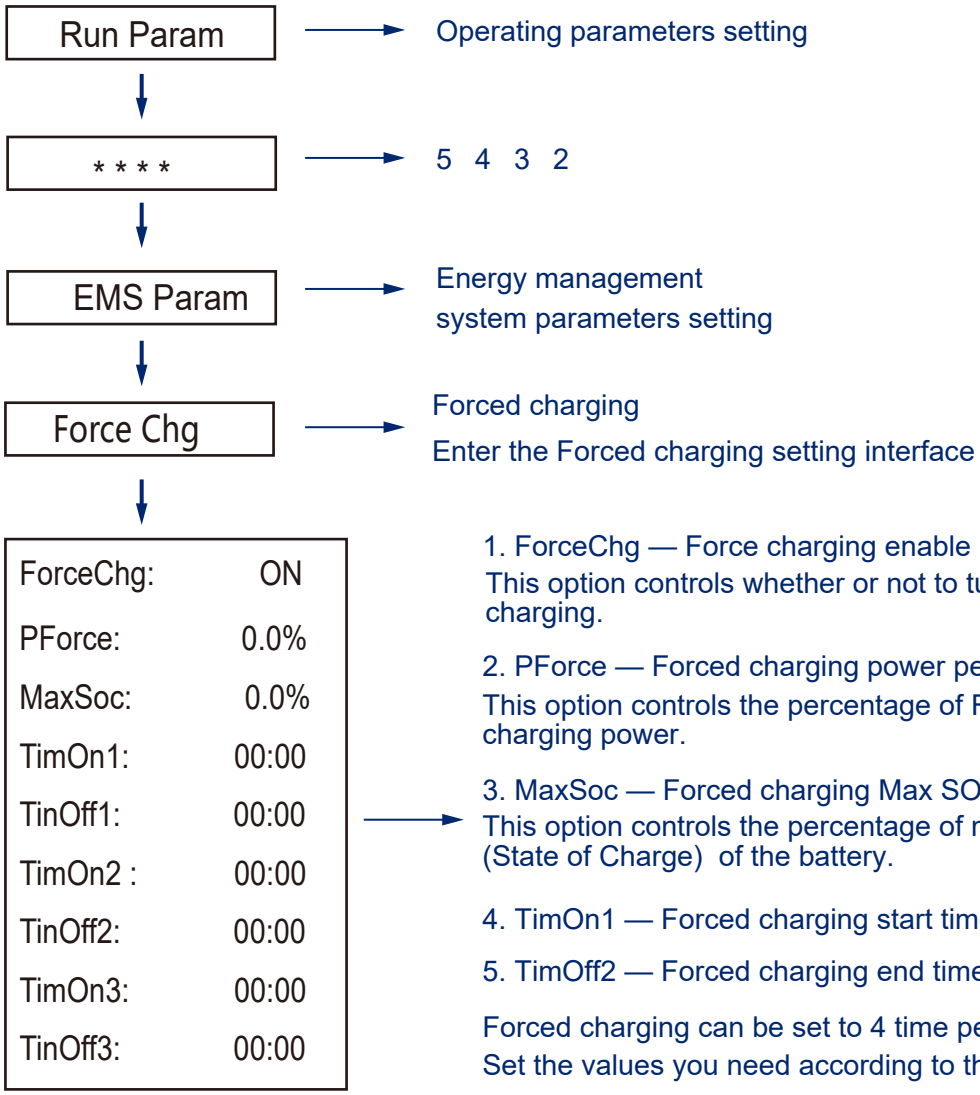
5. TimOn2 — Forced AC grid charging end time 1

Forced AC grid charging can be set up to 4 time periods. Set the values you need according to the instructions.

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3.6 Forced Charging

In this interface, you can set the Forced Charging settings and customise the time period for turning it on and off.



1. ForceChg — Force charging enable
This option controls whether or not to turn on Force charging.

2. PForce — Forced charging power percentage
This option controls the percentage of Forced charging power.

3. MaxSoc — Forced charging Max SOC
This option controls the percentage of maximum SOC (State of Charge) of the battery.

4. TimOn1 — Forced charging start time 1

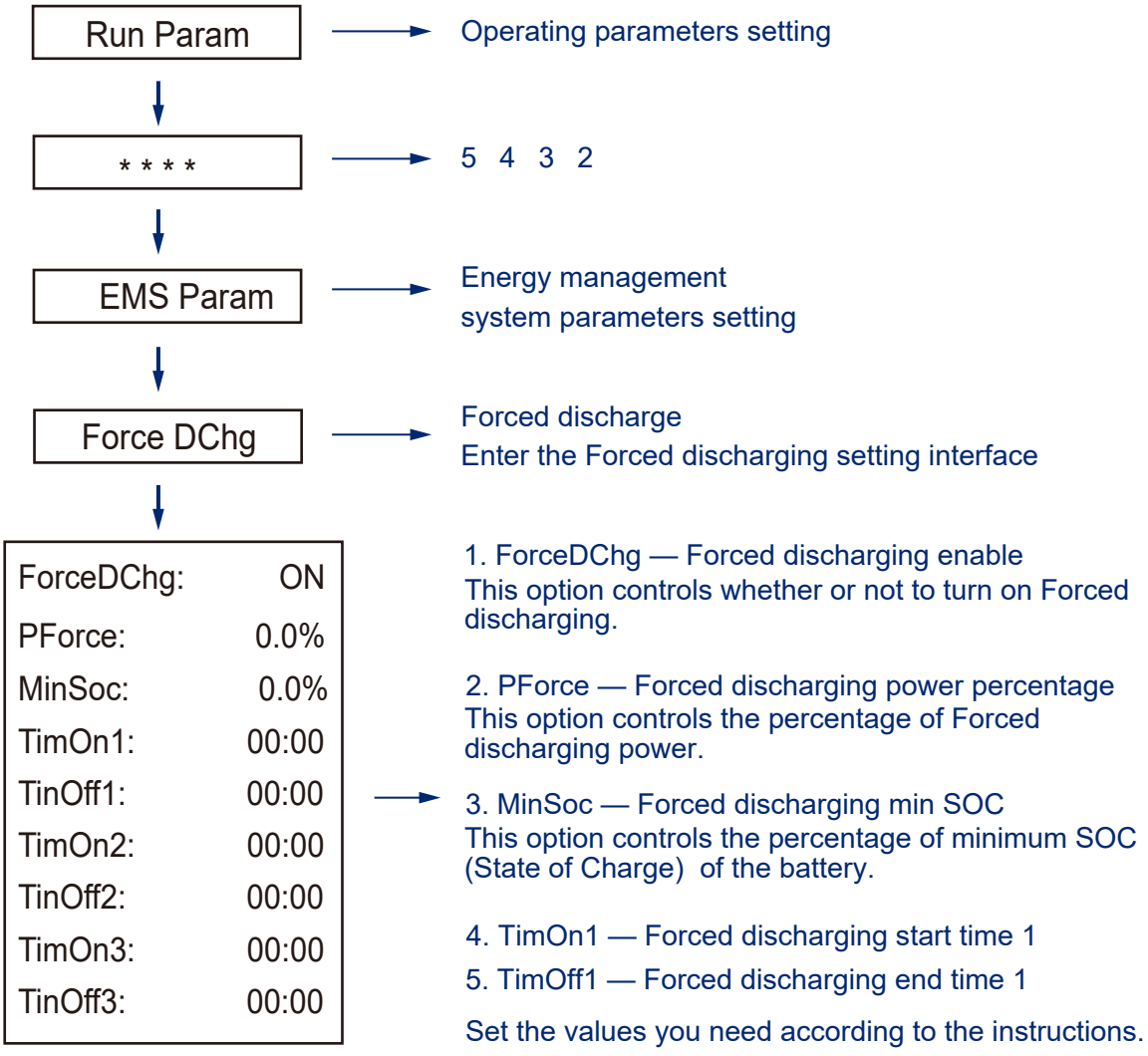
5. TimOff2 — Forced charging end time 1

Forced charging can be set to 4 time periods.
Set the values you need according to the instructions.

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3.7 Forced Discharging

In this interface, you can set the Forced Discharging settings and customise the time period for turning it on and off.



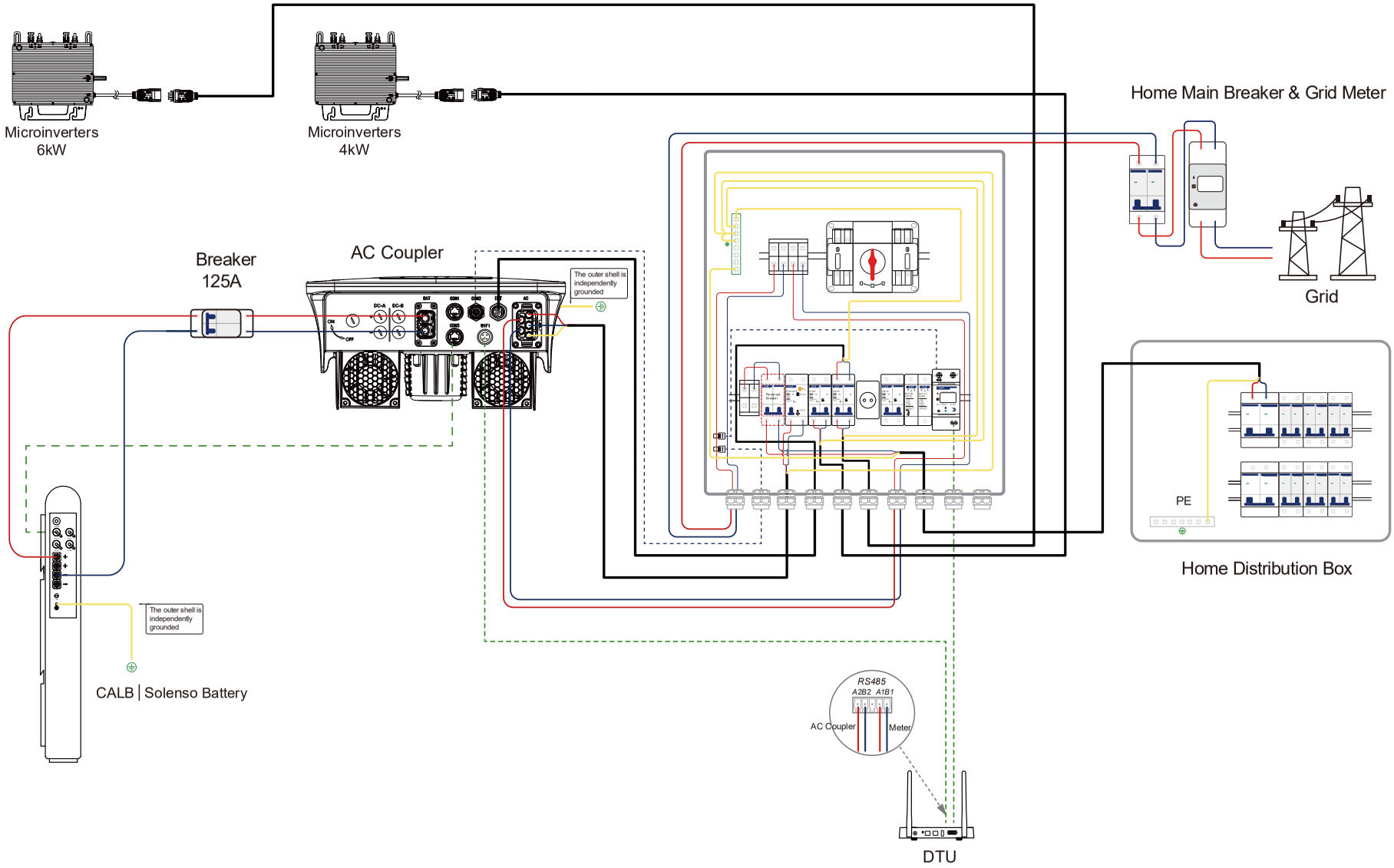
⚠ **Note:**

Forced discharging can be set to three time periods.

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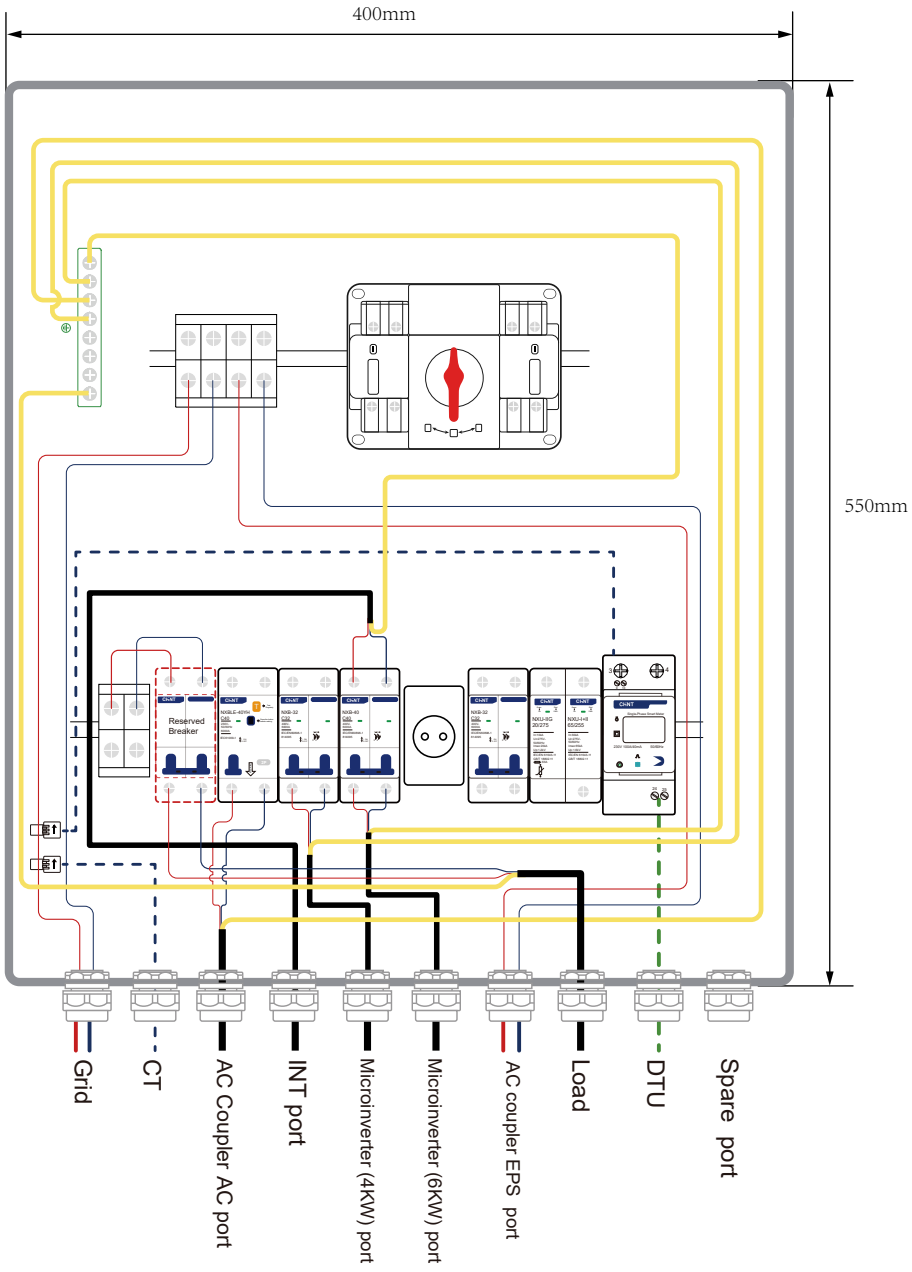
4. System Wiring Configuration

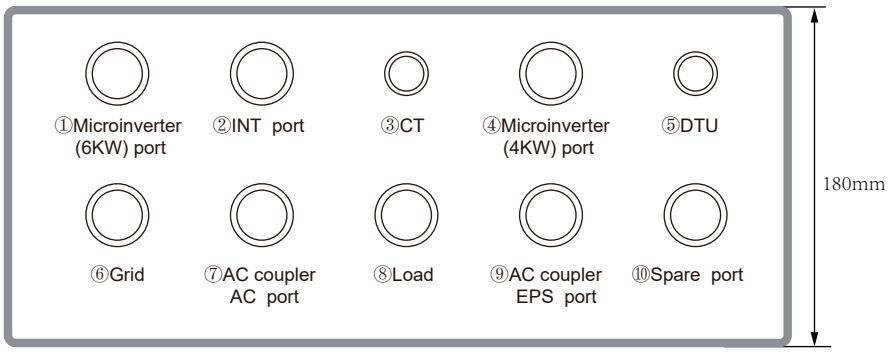
4.1 Microinverter System (6+4kW) Wiring with AC Box SPlus



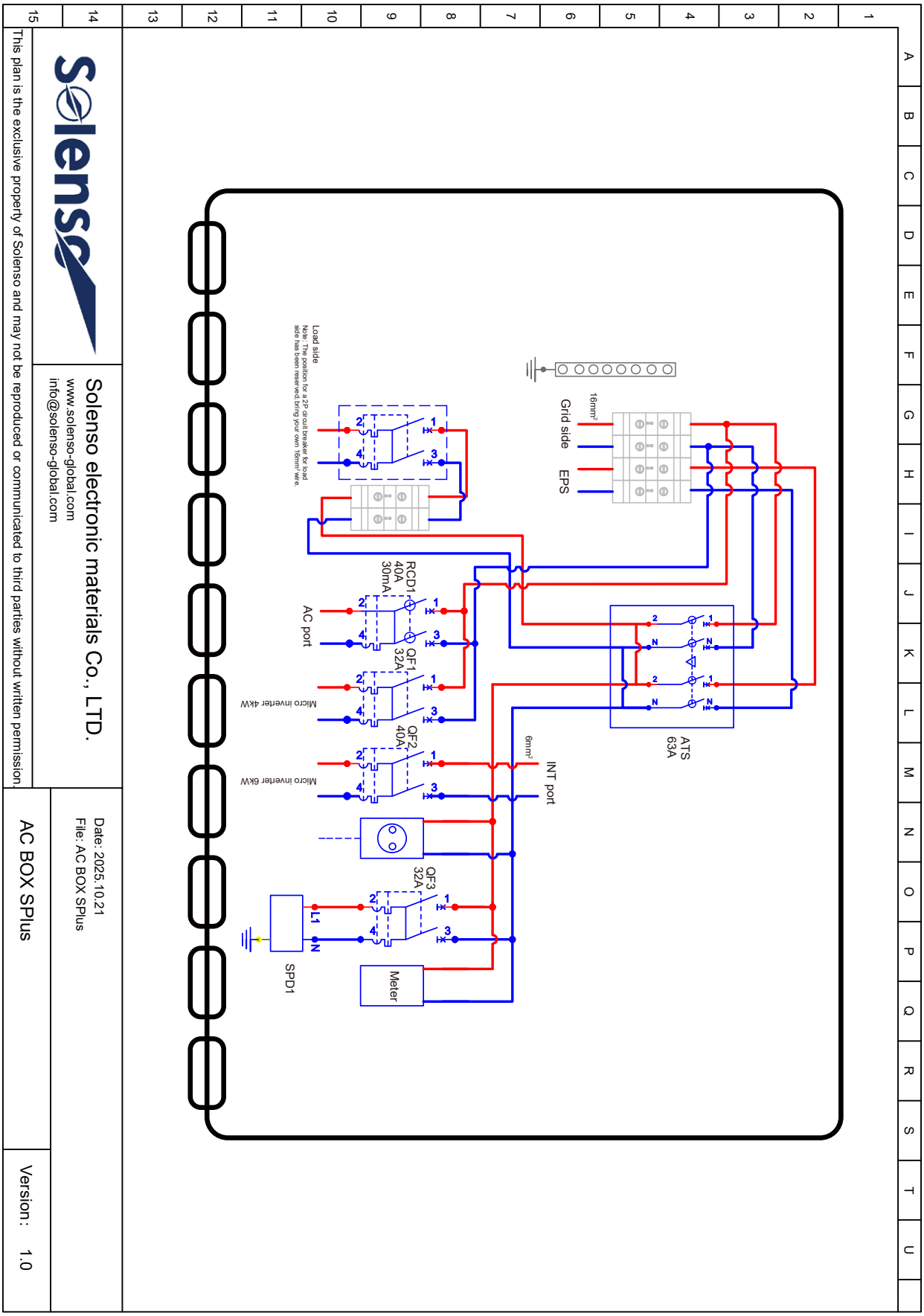
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4.2 AC Box SPlus introduction





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www.solenso-global.com
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Date: 2025.10.21
File: AC BOX SPlus

AC BOX SPlus

Version: 1.0

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