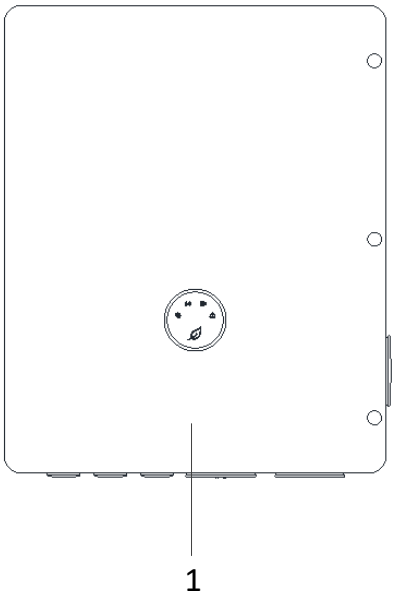
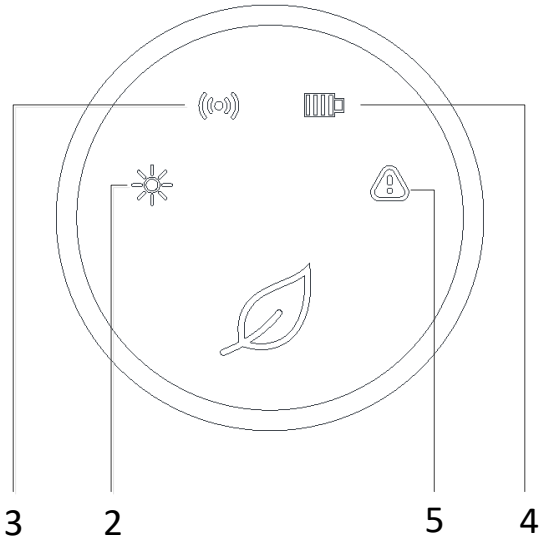
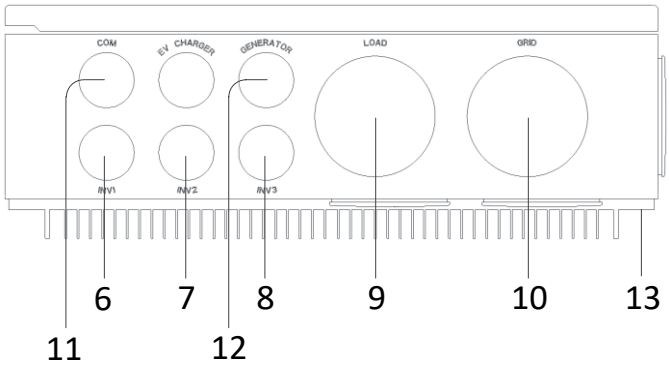
SYN 200-XH-US-1 Quick Guide

1. Overview

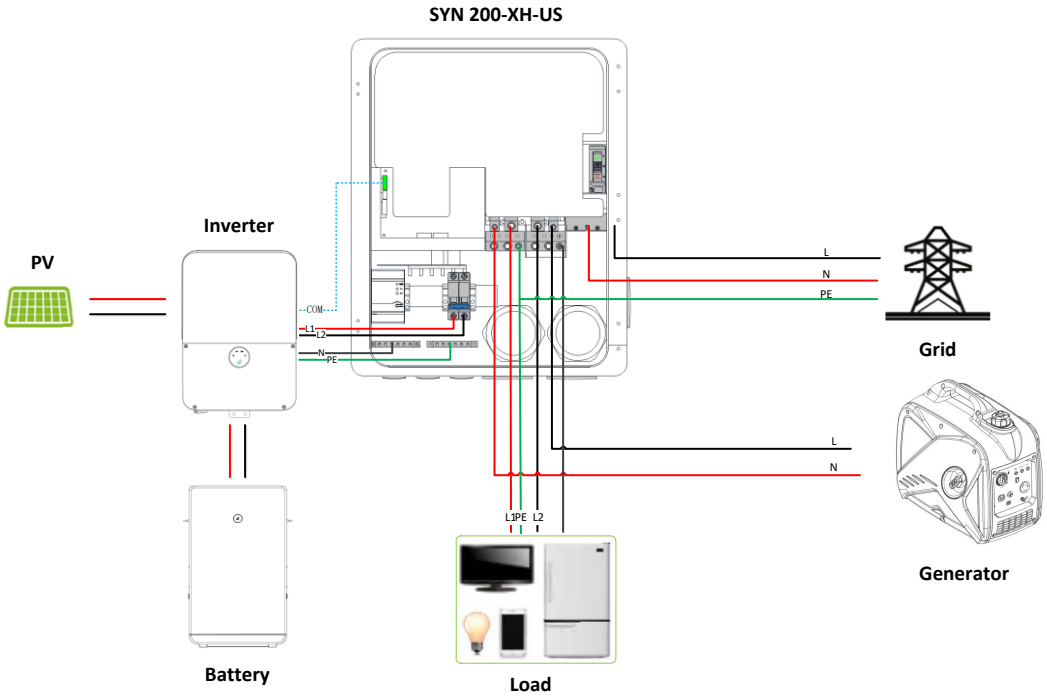




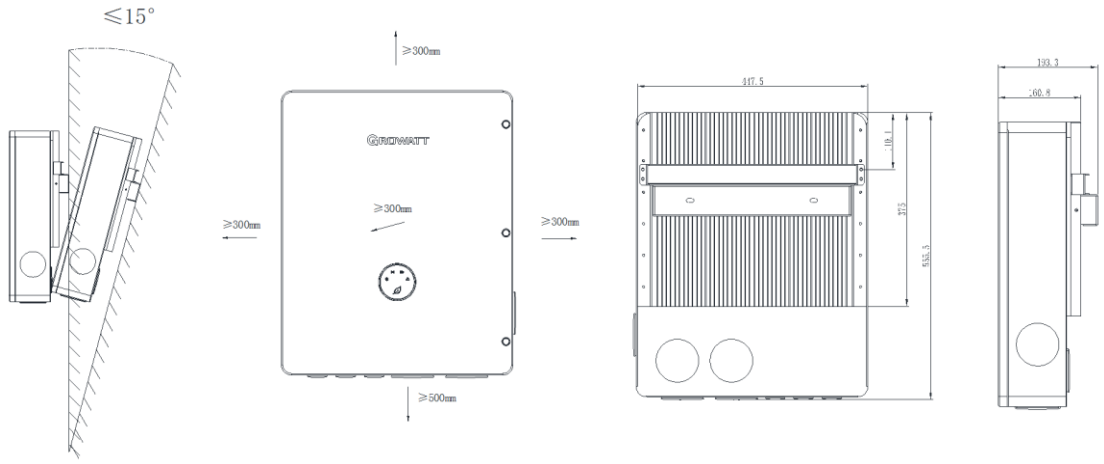


1：Front panel	2：Grid indicator	3：Communication indicator	4：Status Indicator
5：Fault indicator	6：Inverter 1 wiring port	7：Inverter 2 wiring port	8：Inverter 3 wiring port
9：Load wiring port	10：Grid wiring port	11：COM wiring port	12：Generator wiring port
13：Heat sink			

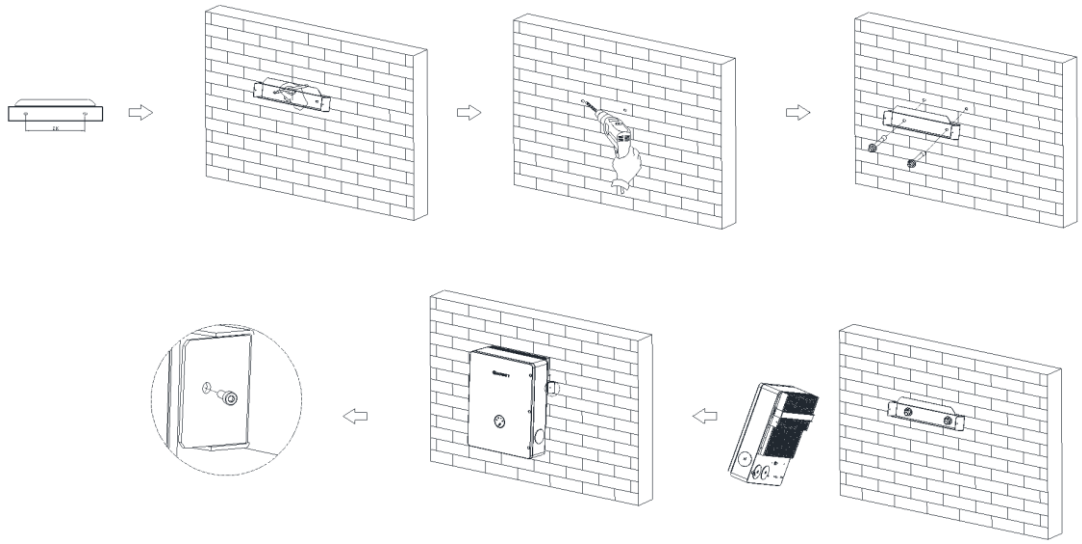
2. Installation



System wiring diagram

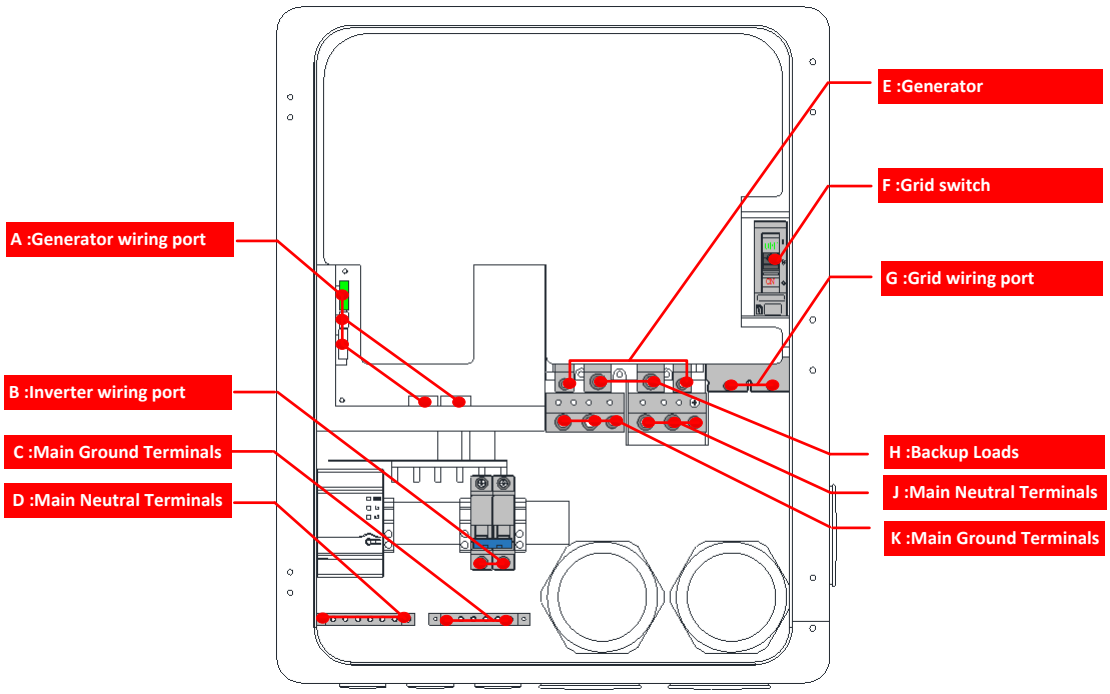


Installation requirements



Wall mounting

3. Electrical connection



Internal wiring diagram

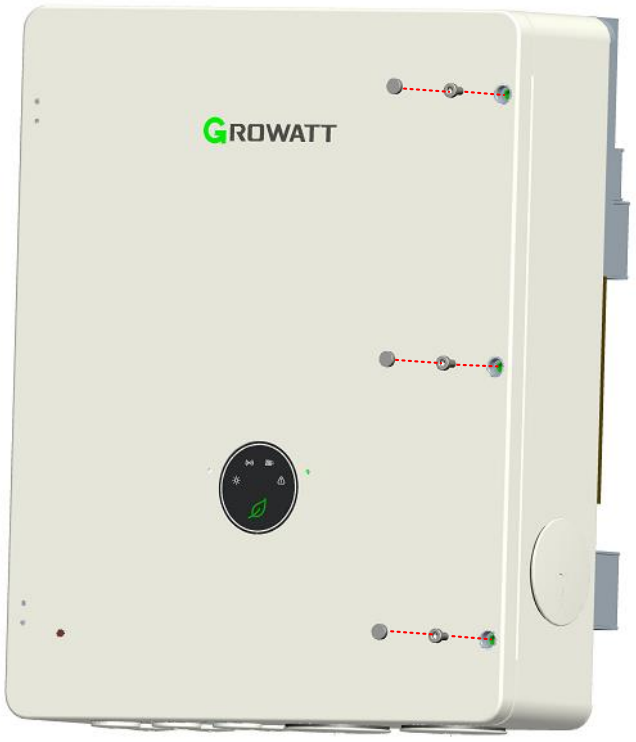
please prepare the cable before connecting as follows

	Cable name	Type	Recommend model	Schematic diagram
1	Grid/Load cable	L1/L2/N	4~4/0 AWG	
2		PE	7~1/0 AWG	
3	Generator cable	L1/L2/N	4~0 AWG	
		PE	7~1/0 AWG	
4	Inverter cable	L1/L2/N	6 AWG	
		PE	9 AWG	
5	12V power cable		16 AWG	
7	Communication cable	RS485	24 AWG	

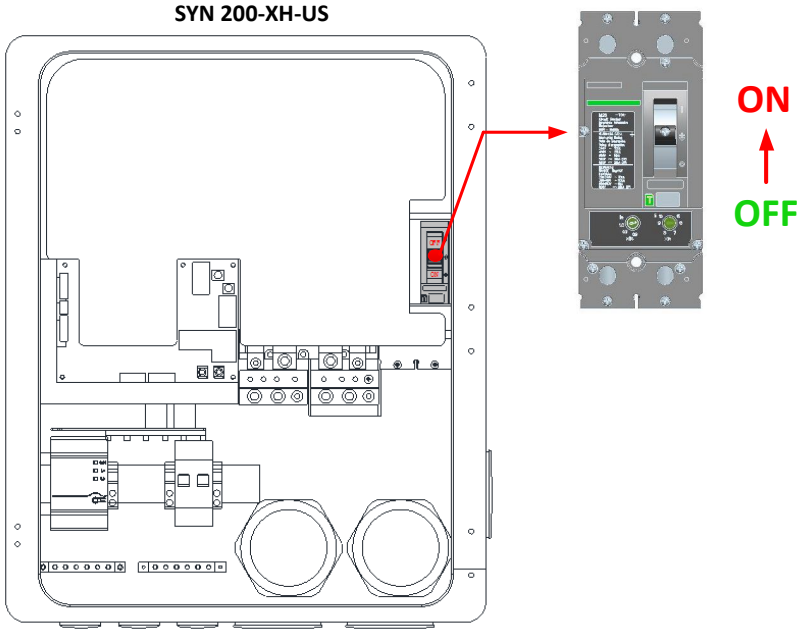
Note: It is recommended to use two or three polychromatic multi-core copper wires cables for Grid/Load/ Generator/ Inverter. Recommended to use yellow-green single multi-core cables for PE. Recommended to use shielded twisted pair cable for RS485 wire.

1) Connect to the Grid and Loads panels.

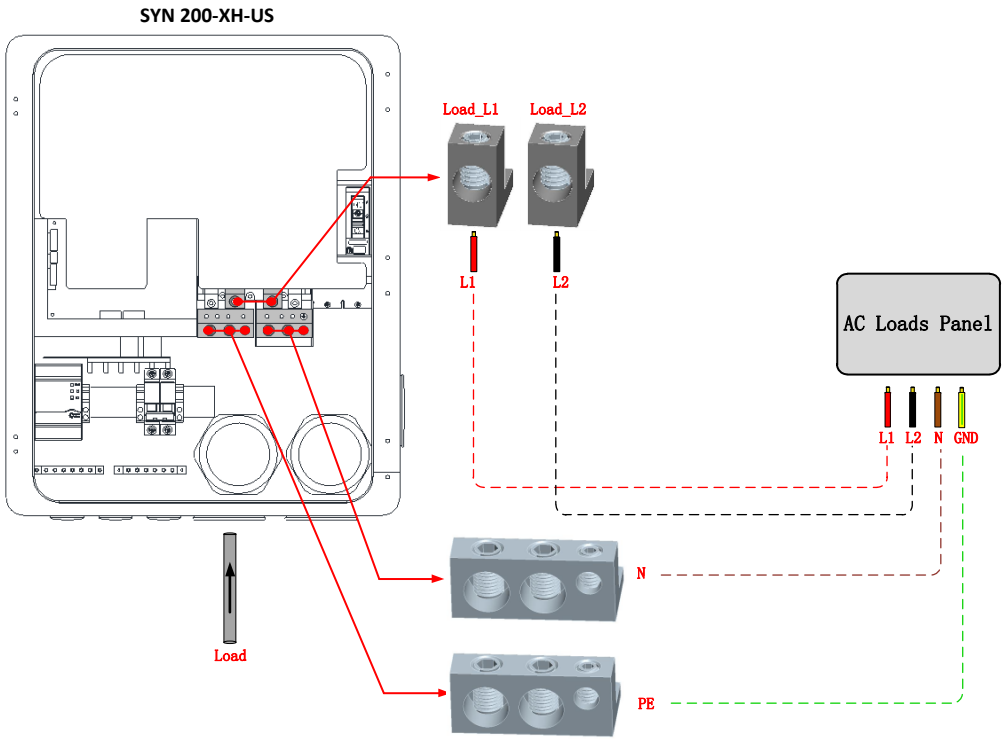
- Release the three Allen screws of the Backup Interface cover and open the upper cover.



- Pull down the main breaker until it shows OFF. Ensure that the main breaker is OFF.

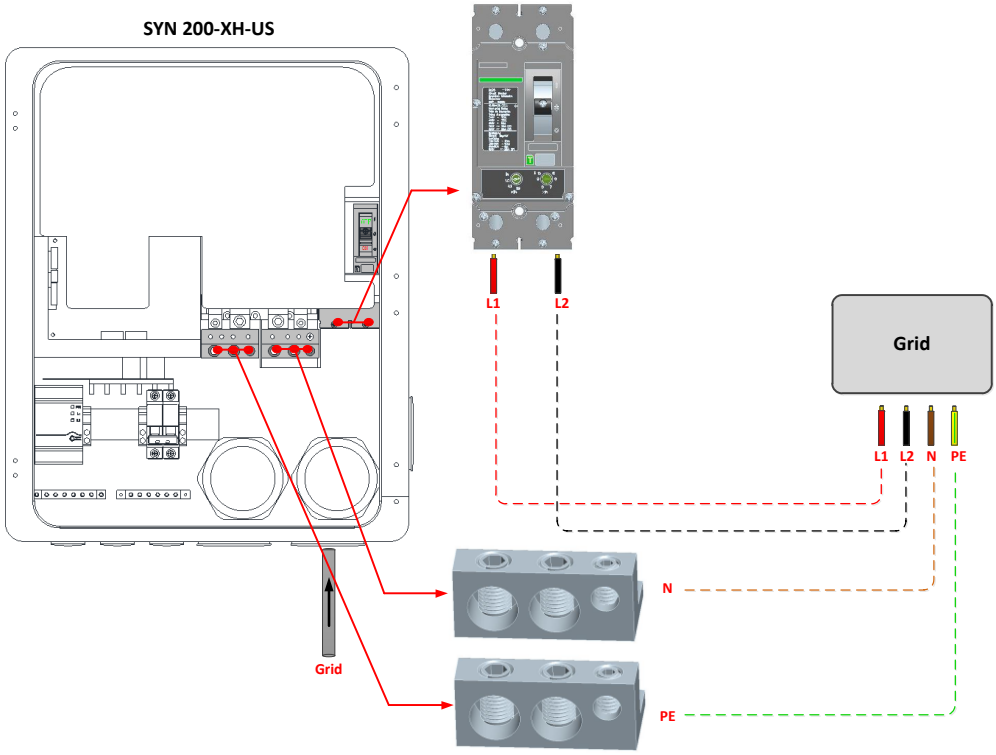


- Install a conduit of the required diameter into the Grid conduit entry. Use the conduit holder to support the conduit.
- Pass the cable from the Backup Loads panel through the Loads conduit.
- Pass the cable from the grid through the Grid conduit.
- Connect the neutral and grounding wires to the neutral and grounding terminals. Tighten the terminal screws with a torque of 221 in*lbs / 22.5 N*m.
- Connect Line 1 and Line 2 wires from the AC loads panel to the loads line terminal. Tighten the terminal screws with a torque of 221 in*lbs / 22.5 N*m.

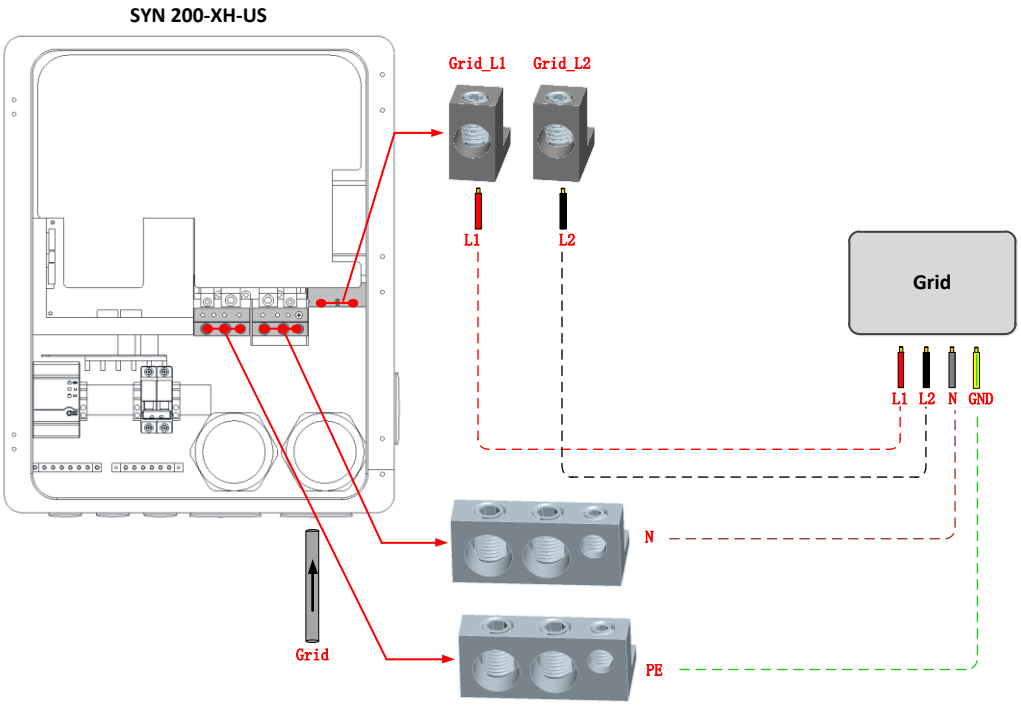


Connection to the Backup Loads

➢ Connect the Line 1 and Line 2 wires to the grid's line terminal. Tighten the terminal screws with a torque of 221 in*lbs / 22.5 N*m.



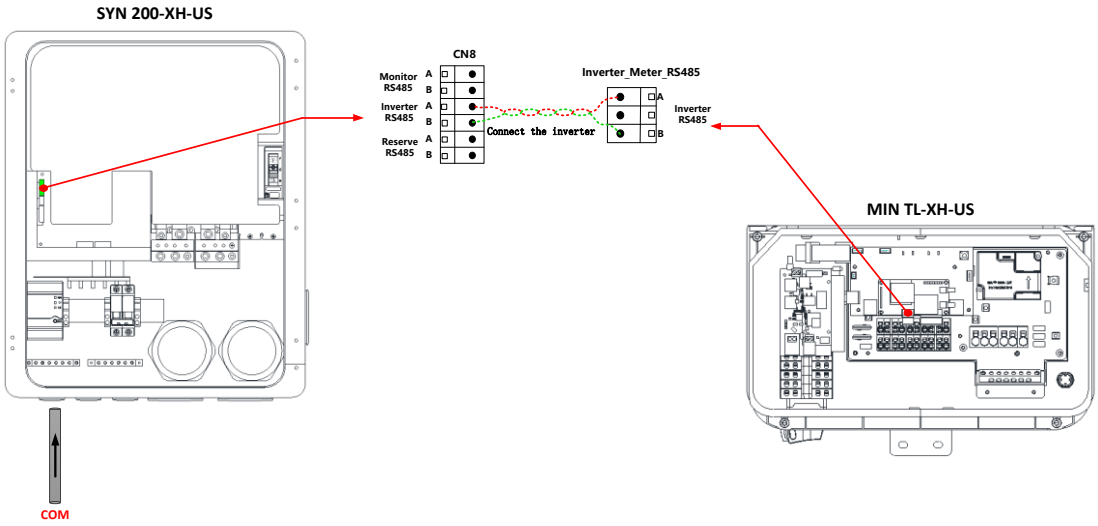
Connection to the Grid（Contains AC breaker）



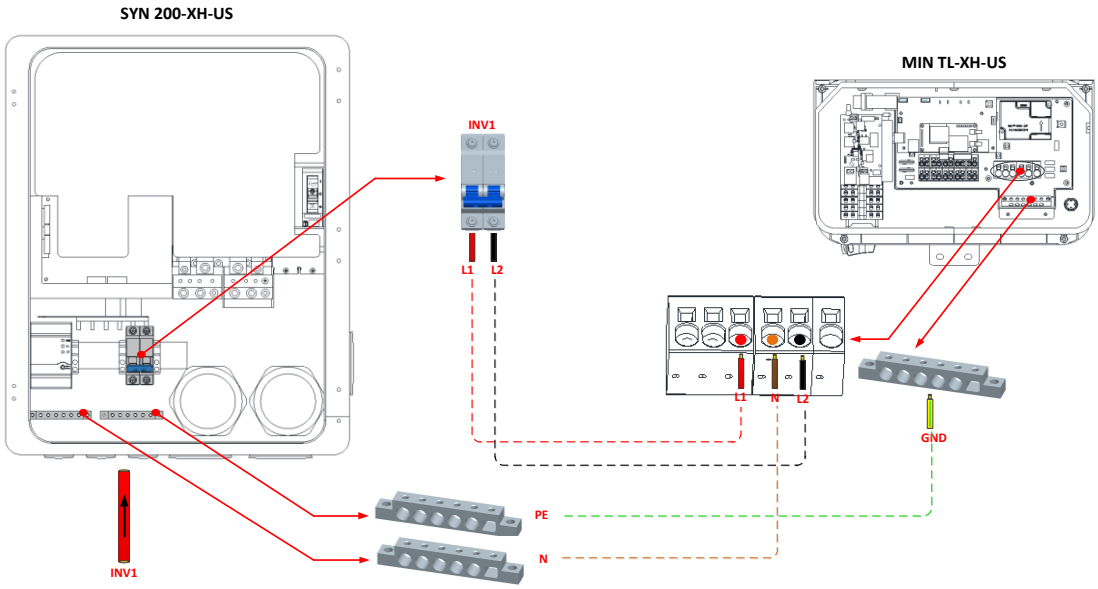
Connection to the Grid（No AC breaker）

2) Connect to the Inverter

You must install the communication cable with the inverter first, and then install the cable.



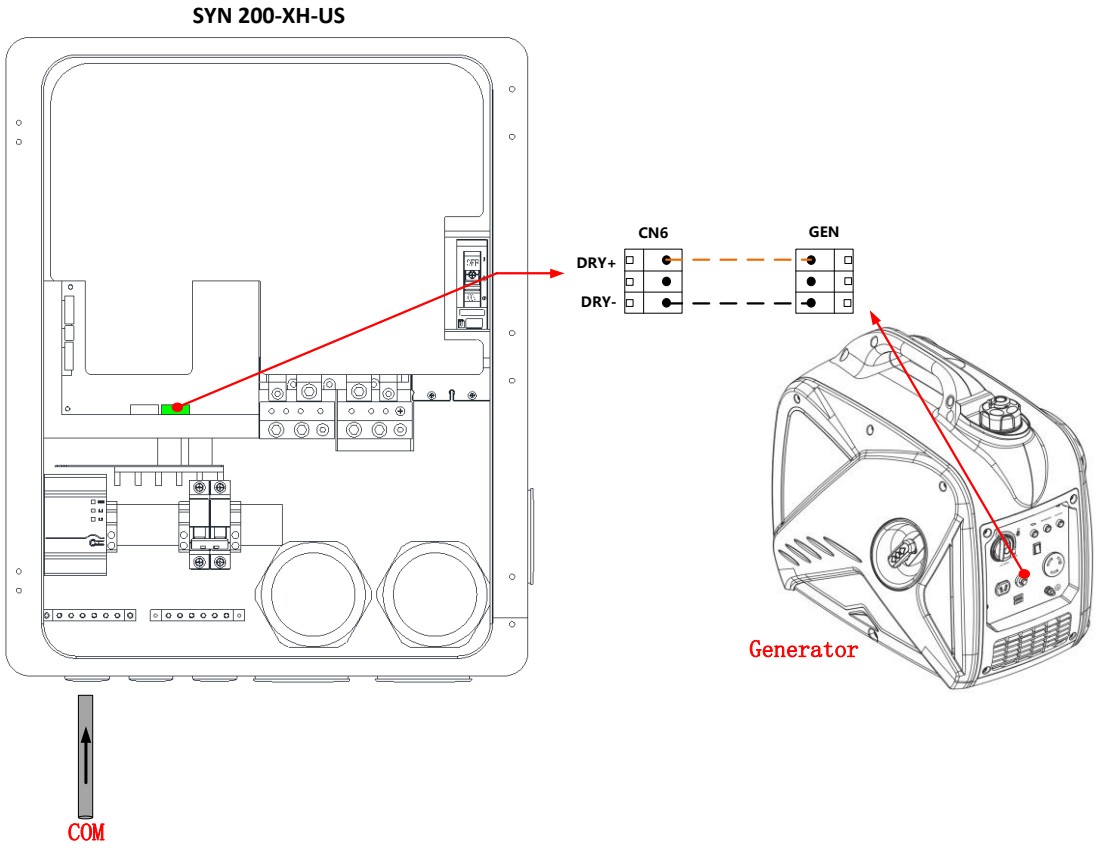
Communication connection between Backup Interface and Inverter



Connection to the Inverter

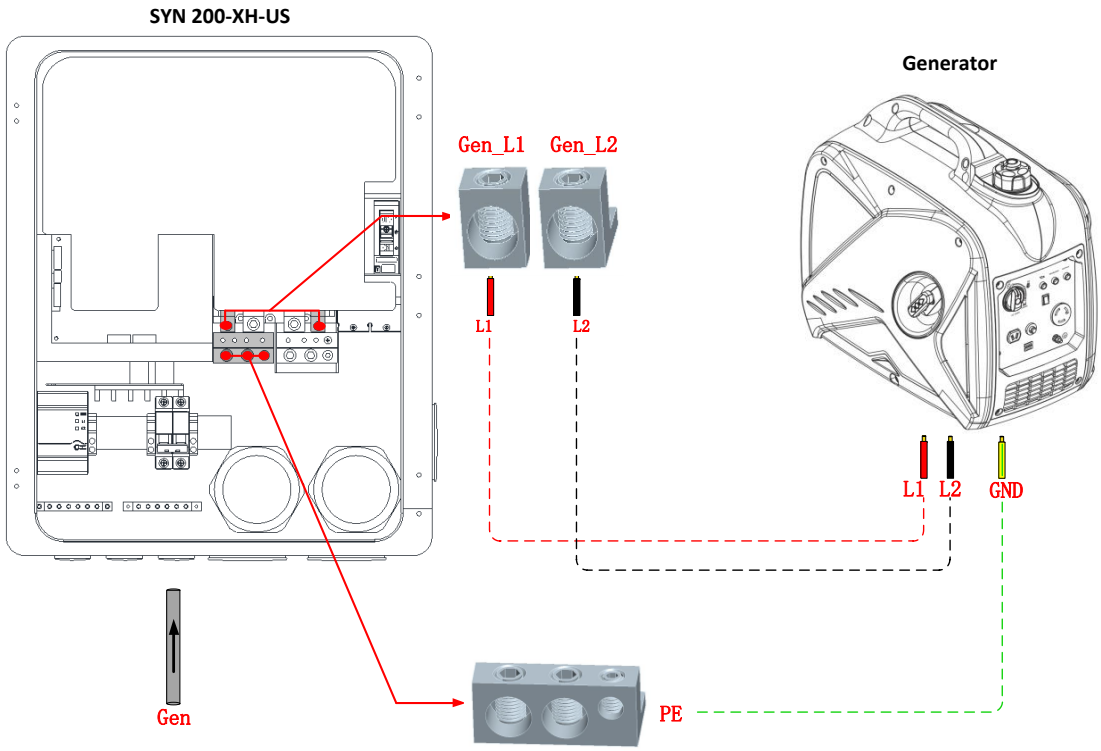
3) Connect to Generator.

You must install the communication cable with the Generator first, and then install the cable.



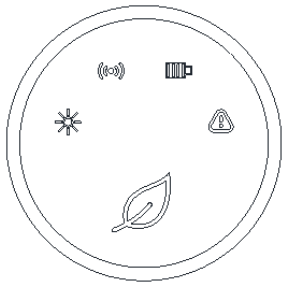
Communication connection between Backup Interface and Generator

Note: The DRY+/DRY- signal of CN6 is the remote control switch signal of the generator.



Connection to the Generator

4. Indicator light behavior description



Description	LED color	LED status	Backup interface status
Grid indicator	Green	Solid	Connect to the grid
Communication indicator	Green	Solid	Communication with the inverter is normal
Status Indicator	Green	Solid	On-grid works normally
		1S on and 1S off	Off-grid works normally
		3S on and 3S off	The generator works normally
Fault indicator	Red	Solid	Fault
		1S on and 1S off	Overload

Note: If the four indicator lights flash at the same time, how does it mean that the backup interface is upgrading the firmware?

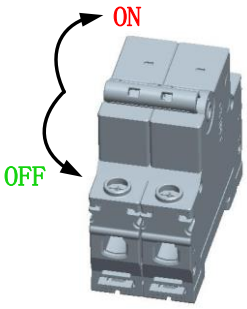
5. System startup and Shut down operations

System power-on operation, Please follow the steps below:

Step 1: Close the DC switch of the ARO battery. Then close the DC switch of the inverter. The battery cannot be woken up if there is no PV input, you need press and hold the battery switch until the indicator light flashes. Please refer to the ARO battery installation manual.

Step2: Observe whether the inverter and battery indicator report errors. If there is no fault, proceed to the next step.

Step 3: Close the INV_breaker of the backup interface.



INV_Breaker

Step 4: Push the Grid_breaker switch upward to display the word ON, indicating that the AC circuit breaker is closed.(If the backup interface has a grid AC circuit breaker)

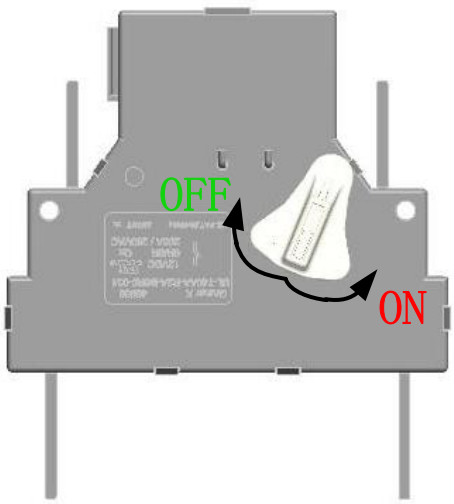
Step 4: if the grid indicator, communication indicator, and status indicator of the backup interface are all green and the fault indicator is off, it means that the backup interface is working normally.
Step 5: Download and install the mobile APP by scanning the QR code on the inverter. Please refer to the inverter manual for details
Step 6: It is a very important step to set the inverter off-grid output enable through APP. For specific operations, refer to the off-grid enable function setting of the TL-HX-US inverter

System power-off operation, Please follow the steps below:

Step 1: Disconnect the miniature circuit INV_breaker on the backup interface.
Step 2: Disconnect the DC switch of the inverter.Press and hold the battery switch button until the indicator light goes out. Then turn off the DC switch of the ARO battery. Please refer to the ARO battery installation manual.
Step 3:Pull down the Grid_breaker switch until the word OFF is displayed, indicating that the circuit breaker is off.
Step 4: Wait and observe that the inverter, battery, backup interface and other indicators are all off, indicating that the system is completely powered off.

6. Manual bypass operation

In case of a Backup Interface failure, it cannot be switched to the bypass state.In order to ensure household electricity, you can manually switch to the mains bypass state by performing the following operations.
Step1: Power down the entire system.
Step2: Make sure that the AC circuit breaker of the grid is disconnected, and manually move the white switch on the AC circuit breaker to be in the ON state.



Step3: Power up the entire system.

7. Service and Contact