Dyness battery and SMA inverter Setup

Check List:

Dyness B4850 module*4 sets
Power cable*1 pair
Parallel cable*3 pair
BAT-BAT communication cable*3 PCS
Battery-Inverter Communication cable*1PCS
SI6.0H-12

Before start, make sure battery and inverter size match.
Follow Dyness user manual to check details, it is recommended to use battery in 1: 2 configuration.
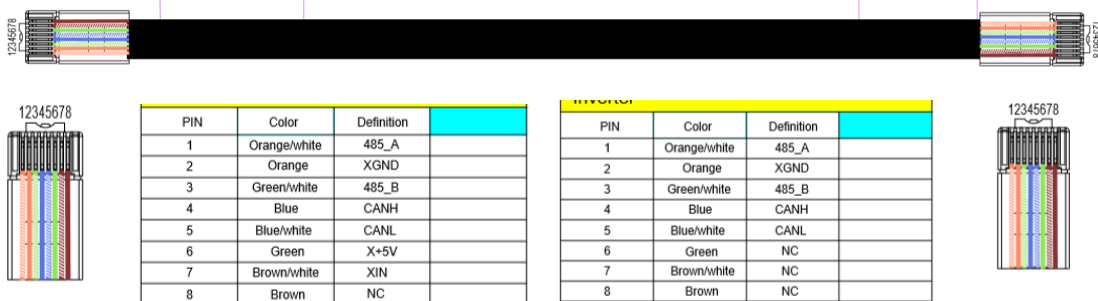In our case now, 5kW inverter connects to 10kWh battery.

Step 1 : Cable connect in inverter
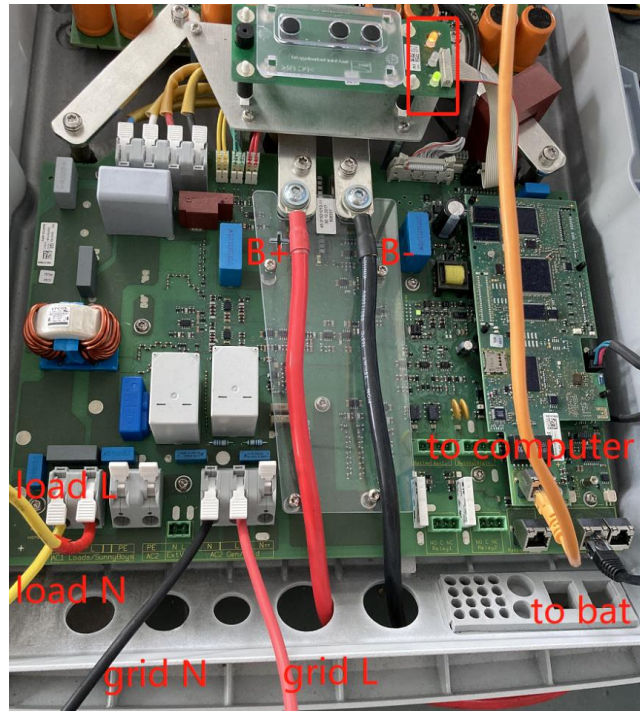Keep both inverter and battery completely off.
Connect power cable and Battery-Inverter Communication cable to inverter firstly.
This comm cable from inverter RJ45 port（ComSyncIn） to Battery IN port.
It's a standard cable that PIN sequence is T-568B on the 2 sides.

PIN	Color	Definition	
1	Orange/white	485_A	
2	Orange	XGND	
3	Green/white	485_B	
4	Blue	CANH	
5	Blue/white	CANL	
6	Green	X+5V	
7	Brown/white	XIN	
8	Brown	NC	

PIN	Color	Definition	
1	Orange/white	485_A	
2	Orange	XGND	
3	Green/white	485_B	
4	Blue	CANH	
5	Blue/white	CANL	
6	Green	NC	
7	Brown/white	NC	
8	Brown	NC	

Dyness battery package not include this cable,need customer to make it.

Step 2:Modules in parallel connection

Connecting the parallel cable and comms cable between module and module.Note the Bat-Bat comms cable is from the master CAN OUT to slave1 CAN IN,slave1 CAN OUT to slave2 CAN IN… Then connect Battery-Inverter Communication cable to master battery IN.

Step 3:Connect the power cable to battery system

Generally we use 1 pair of power cable,and connect them diagonally ,one is on the top and another one is on the bottom. But when the inverter power more than 5KW,we recommend customer to connect 2 pairs of power cables,as the below shows

Because 1 pair of power cable Max. continuous current is 120A,if the current is too high on one cable,it will cause the socket and plug temperature become too high,affect the battery performance.

Step 4 : Dial DIP switch on master
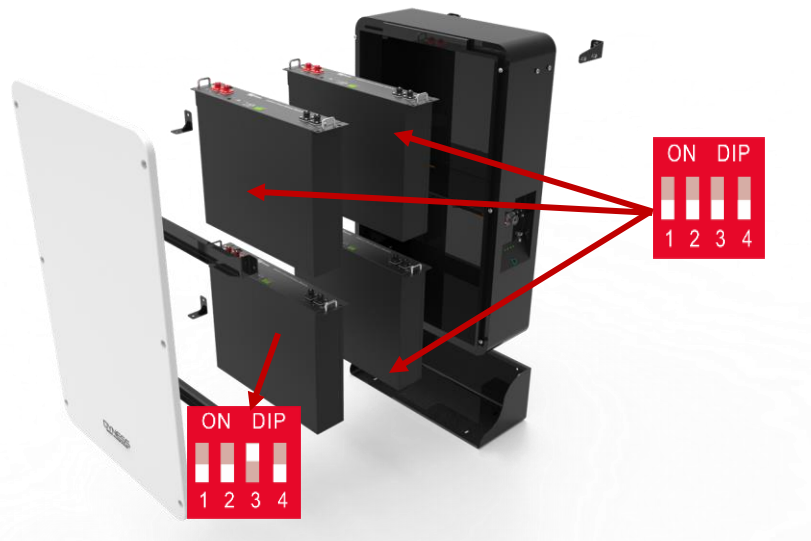
Make sure master battery is dialed as below method.

All the slaves DIP mode keep 0000
Must set DIP mode before starting the battery.
If the battery is only one，make sure DIP mode is 0010.
If the battery is POWERBOX,you need confirm the master module inside the box is 0010 or not.

Step 5 : Breaker between inverter and battery

Connect DC breaker between inverter and battery to protect both products.

Step 6: Power on the battery system

Switch on all the modules rocker switch firstly.

Secondly long press the master SW button to wake up the master battery,then slaves battery will be woken up automatically one by one.
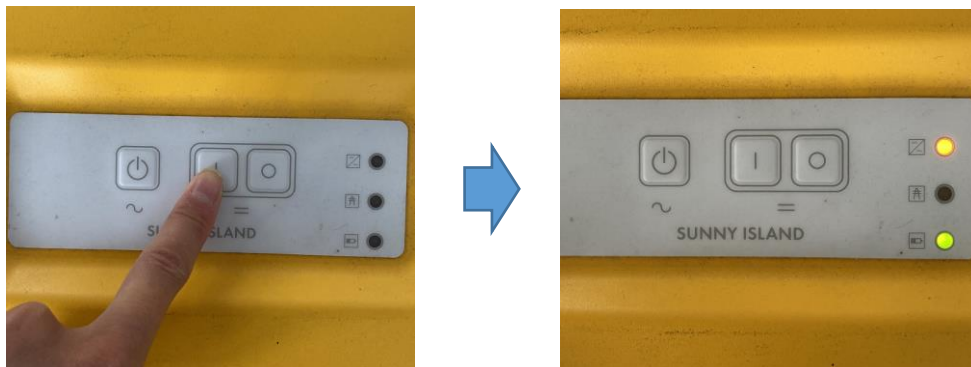

Step 7:Switch on DC breaker between the battery system and inverter

Step 8: Switch on the inverter

Pressing the "On" button will switch the Sunny Island on. Inverter is in standby mode after being switched on.

Step 9: Establish a connection to the user interface of the inverter

1. Establishing a direct connection via WLAN.

    (1) SSID in WLAN: SMA[serial number] (e.g. SMA0123456789)

    (2) Device-specific WLAN password: see WPA2-PSK on the type label of the product or the rear side of the manual included in delivery.

    (3) Standard access address for a direct connection via WLAN outside of a local network: http://smalogin.net or 192.168.12.3

2. Establishing a Direct Connection via Ethernet.

    (1) Using a standard communication cable from inverter RJ45 port （Com ETH） to computer Ethernet interface.

    (2) Standard inverter IP address for the direct connection via

Ethernet: 169.254.12.3
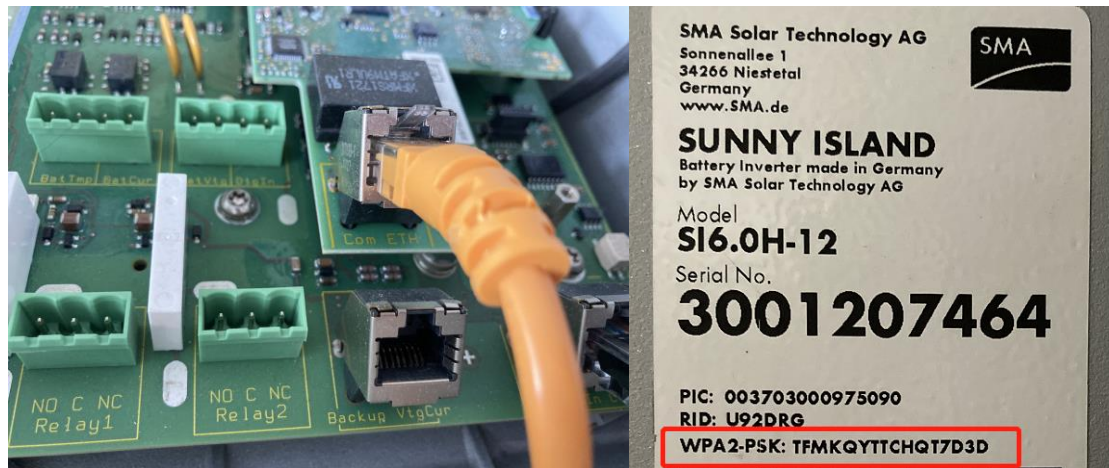
Step 10: Logging In the User Interface

After a connection to the user interface of the inverter has been established, the login page opens. Log in as Installer for the First Time. The passwords for the user groups Installer is WPA2-PSK on the type label of the product.

Step 11: Starting Page Design of the User Interface

Once you have logged into the user interface as Installer, the installation assistant opens automatically, Follow the installation assistant steps and make the settings appropriate for your system. Once all settings are correct, select [Next] in the summary. Then the

start page of the user interface opens.

1	2	3	4	5	6	7
Network configuration	Time and date	Application	System configuration	Grid management service	Battery configuration	Summary

Summary

ⓘ **User information**

Network configuration

Automatic speedwire configuration switched on	Yes
WLAN is turned on	Yes
SSID of WLAN	
Encryption for WLAN	WPA2-AES
Automatic configuration of WLAN is turned on	Yes

Summary

The summary lists the settings made while running the installation assistant.

Time and date

Automatic time synchronization	Yes
Time zone	(UTC+08:00) Peking, Chongqing, Hongkong, Urumchi

Application

Country standard set	[IT] CEI0-21:2019 System >11.08 kW ext. Decoup. Protection Device
Set country standard	-------
Nominal voltage and frequency	230V_50Hz

System configuration

Cluster configuration	Single phase
Grid creating generator	Mains
Maximum current from public grid	20.000 A

Battery configuration

Battery type	Lithium-Ion (Li-Ion)
Battery nominal capacity	50 Ah

Export all parameters   Export the summary

Back   Continue

Serial number: 3001207464
Firmware version: 3.20.9.R

User group: Installer
Date: 11/19/20 11:15 AM

SUNNY ISLAND 6.0H   SMA

🏠 Home   ⓘ Instantaneous values   ⚙ Device parameters   ☰ Events   🔧 Device configuration   🗄 Data   👤 ▾   ❓ ▾

Device status

Ok

Battery

Battery operating status:	Discharge battery
Current battery state of charge:	65 %
Present battery discharge:	0 W

Nominal energy throughput of the battery

	Electric discharge:	Charge:
Today:	-------	-------
Yesterday:	-------	-------
Total:	0 Wh	0 Wh

Power at the grid-connection point

0 w

Energy exchange at the grid-connection point

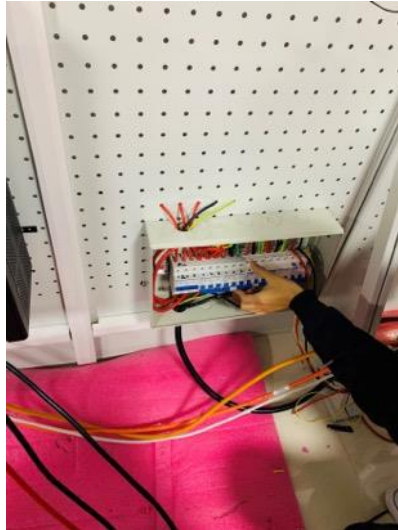|	Consumption:	Grid feed-in:
Today:	-------	-------
Yesterday:	-------	-------
Total:	0 Wh	0 Wh

State of charge
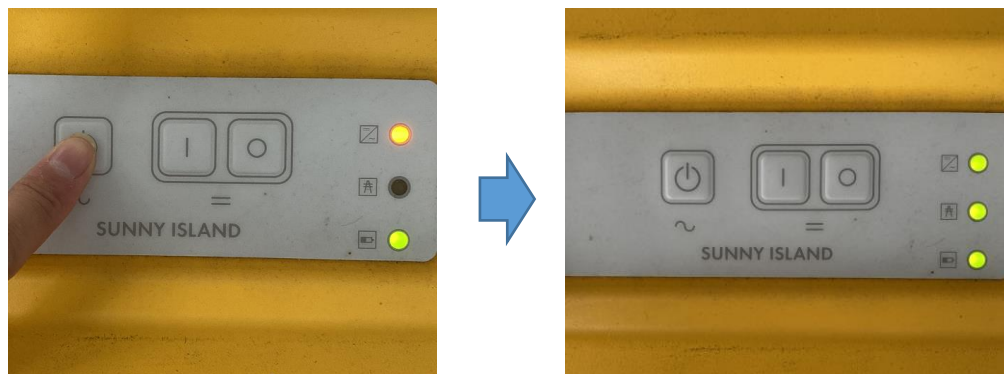
‹ Nov 19, 2020 ›

100.00 %

75.00 %

50.00 %

Step 12: Battery and inverter are connected!

Now,we can see that communication between battery and inverter is success.
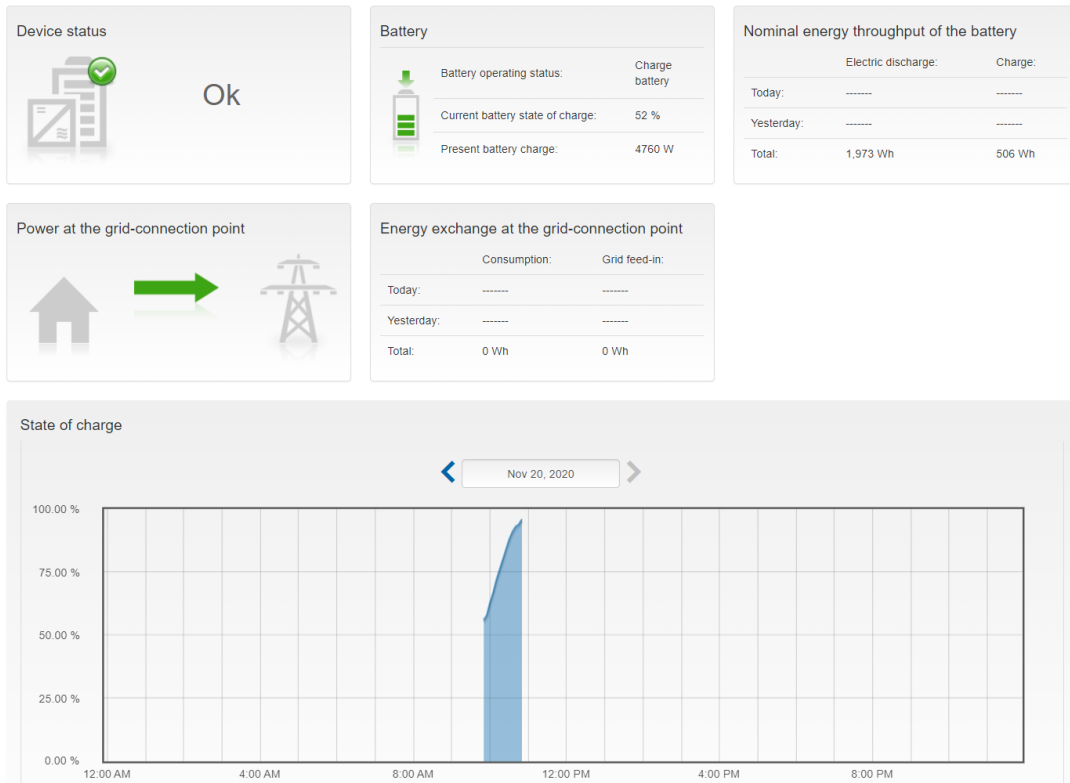
Step 13 : Power on the AC/Grid

Next,press the start-stop button, you can start the system.

Battery starts to charge.

Step 14: You are ready to go

Max Charging(Bulk) Voltage: 53.5V

Absorption Voltage: 53V

Float Voltage: 52.5V

Shut Down(cut off) Voltage: 47V
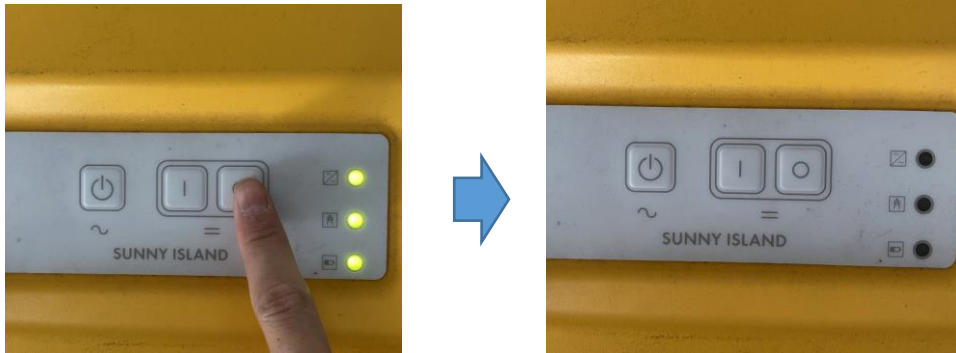
Shut Down(cut off) SOC: 20%

Restart Voltage: 49V

Max Charge Current: 25A*battery QTY

Max Discharge Current: 25A*battery QTY

Step 15: Shut Down
POWEBOX
1 Remove all the load

2 Disconnect Grid

3 Turn off DC breaker of Powerbox.

4 Long press 3s Reset button of the Powerbox to power off battery

5 Turn off the inverter power switch,shut down the inverter

B4850/B3 Parallel
1 Remove all the load

2 Disconnect Grid

3 Turn off DC breaker between the battery and inverter.

4 Turn off the inverter power switch,shut down the inverter

5 Long press SW button to power off the battery,from the master to the slaves one by one.Then switch off all the batteries' Power switch

Note:
1.Battery LED has three color:
Green means state of charge is more than 50%.
Orange means state of charge is between 50% and 20%.
Red means state of charge is less than 20%.
2.Inverter LED has two color:
Orange means inverter is in standby or energy-saving mode
Green means inverter is in operation