

# 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.

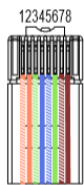
## Step 1 : Cable connect in inverter

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 (ComSyncln) to Battery IN port.

It's a standard cable that PIN sequence is T-568B on the 2 sides.

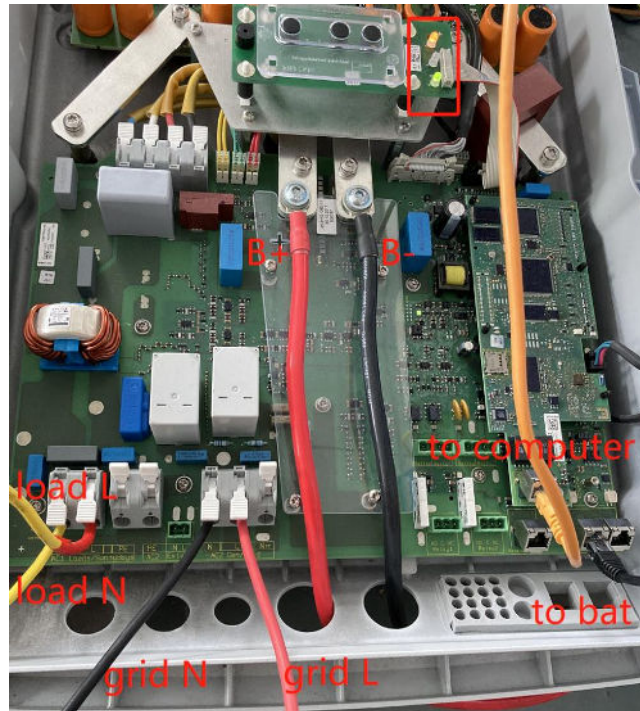


PIN	Color	Definition	
1	Orange/white	485_A	
2	Orange	XGND	
3	Green/white	485_B	
4	Blue	CANH	
5	Blue/white	CANL	
6	Green	X+5V	
7	Brown/white	XIN	
8	Brown	NC	

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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

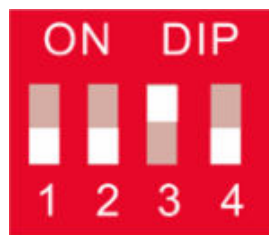
Generally we use 1 pair of power cable, and connect them diagonally, one is on the top and another one is on the bottom. But when the inverter power more than 5KW, we recommend customer to connect 2 pairs of power cables, as the below shows



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.

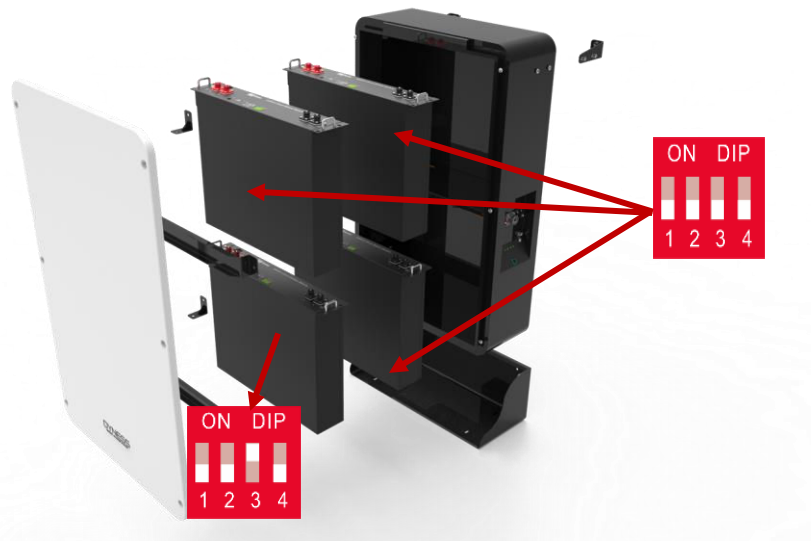


**All the slaves DIP mode keep 0000**

**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.

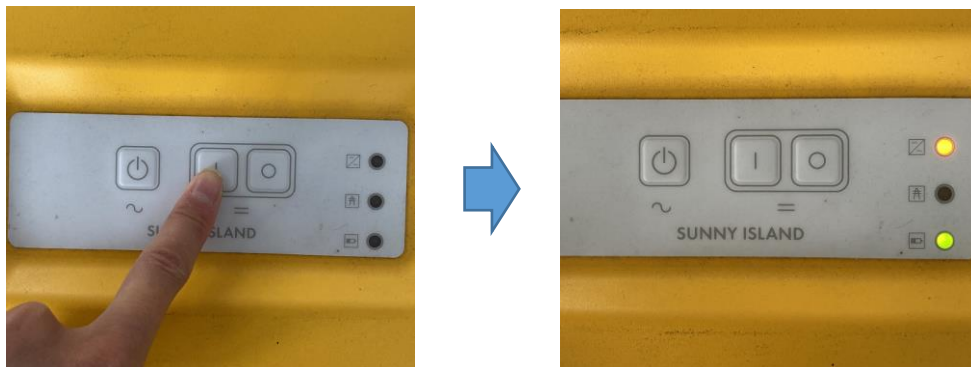


### Step 7: Switch on DC breaker between the battery system and inverter



### 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.

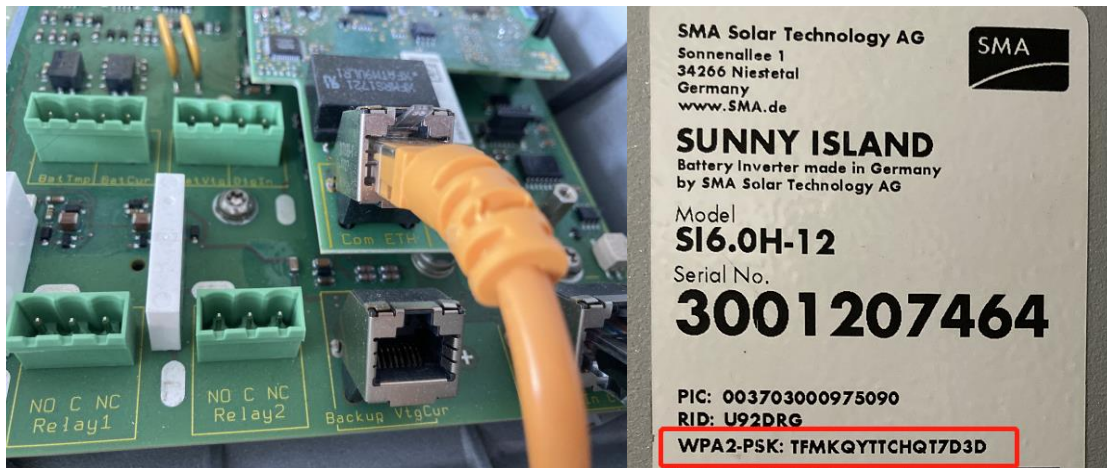


### Step 9: Establish a connection to the user interface of the inverter

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.

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Login

Language:

User group:

Password:

[Forgot password?](#)

## 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.

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

### Summary

**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

**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

Buttons: Export all parameters, Export the summary

Buttons: Back, Continue

Serial number: 3001207464  
Firmware version: 3.20.9.R

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

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Navigation bar: Home, Instantaneous values, Device parameters, Events, Device configuration, Data

**Device status**

Ok

**Battery**

Battery operating status:	Discharge battery
Current battery state of charge:	85 %
Present battery discharge:	0 W

**Nominal energy throughput of the battery**

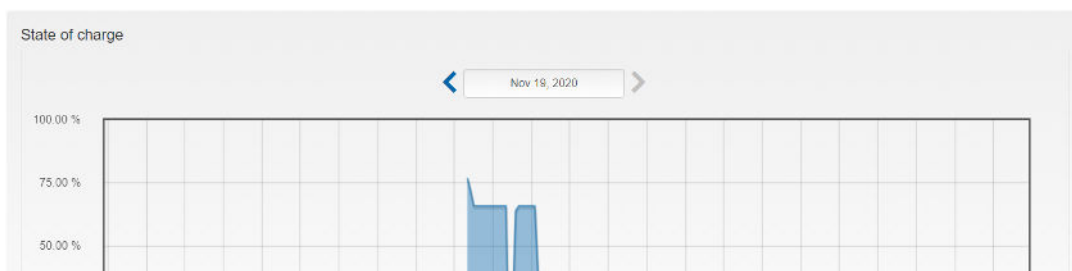
	Electric discharge:	Charge:
Today:	-----	-----
Yesterday:	-----	-----
Total:	0 Wh	0 Wh

**Power at the grid-connection point**

0 w

**Energy exchange at the grid-connection point**

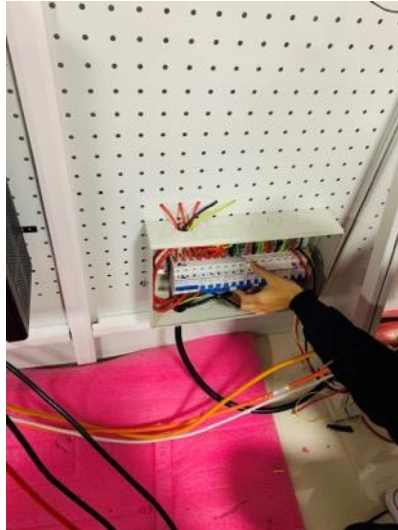
	Consumption:	Grid feed-in:
Today:	-----	-----
Yesterday:	-----	-----
Total:	0 Wh	0 Wh



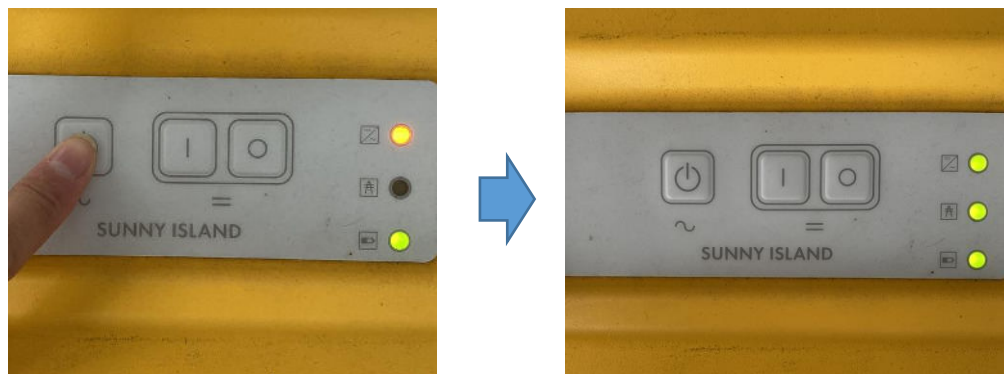
## Step 12: Battery and inverter are connected!

Now, we can see that communication between battery and inverter is successful.

## Step 13 : Power on the AC/Grid




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



Battery starts to charge.




Device status



Ok

Battery




Battery operating status:	Charge battery
Current battery state of charge:	52 %
Present battery charge:	4760 Wh

Nominal energy throughput of the battery

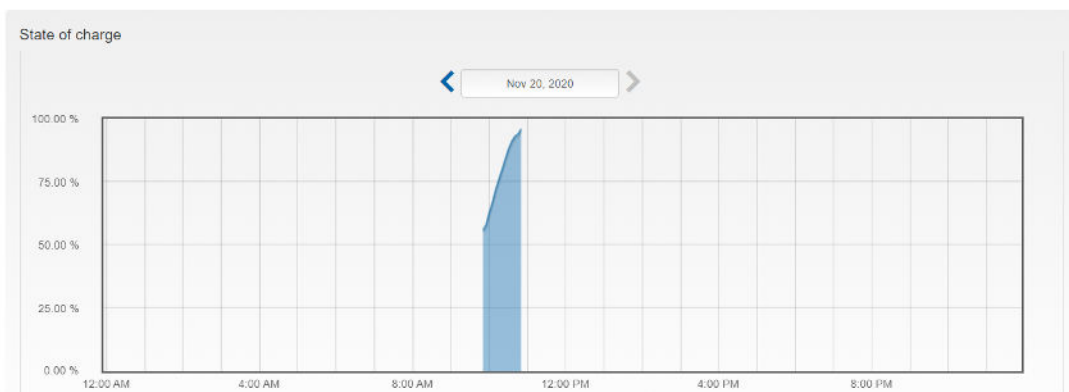
	Electric discharge:	Charge:
Today:	-----	-----
Yesterday:	-----	-----
Total:	1,973 Wh	506 Wh

Power at the grid-connection point



Energy exchange at the grid-connection point

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



## 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

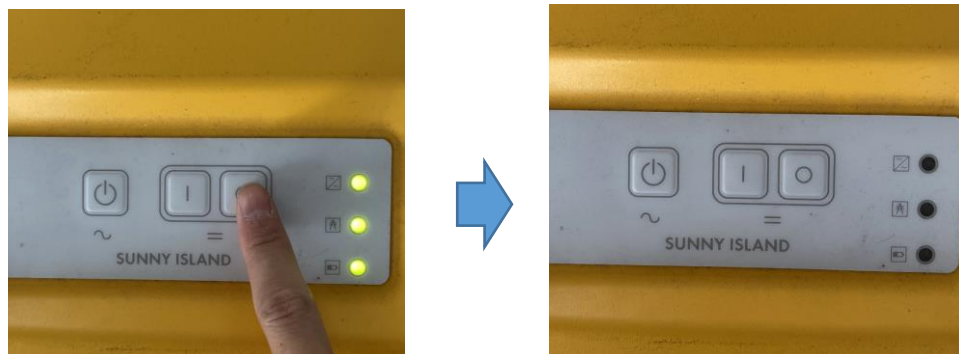
Max Charge Current: 25A\*battery QTY

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