Goodwe 5048ES with BYD B-BOX (2.5-10) Installation Guide

Attention:

Goodwe 5048D-ES in this manual is the new one with serial number starting with 9 ie 95048ESU16XXXXX.

For the Goodwe 5048D-ES with starting SN 3, please refer to other document.

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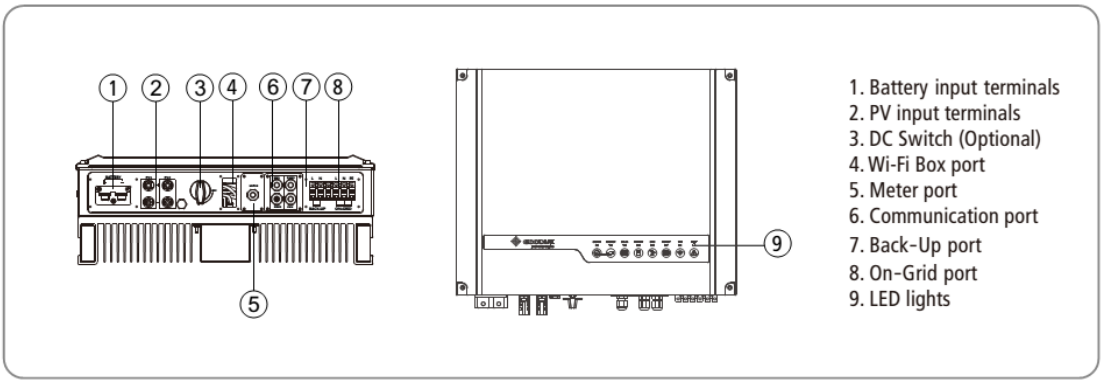
Part 1: Inverter and battery physical connection



1.1 DC POWER connection (Battery and PV connection)

Referring to Goodwe ES manual 4.1 & 4.2 as well as BYD battery manual for physical connection

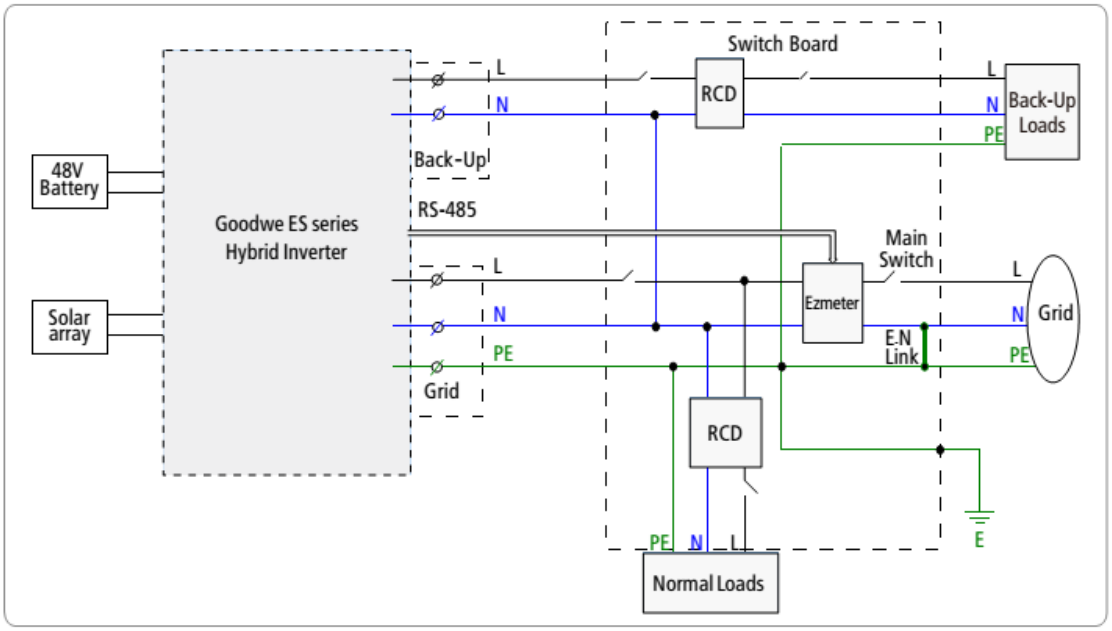
1.2 AC POWER connection

Goodwe 5048D-ES inverter has the grid connected and back up connection at the bottom of inverter.

Customer could connect essential loads to the back up supply part so that when the grid is off, the inverter still support back up load within 8ms.

During the grid connected condition, the inverter still recognize back up and grid tied load as entire load, support these loads from PV, battery and grid. Even when there is no available PV and battery, the inverter still use the grid power to support both loads.

Circuit diagram:



Attention point:

a. According to Australian Standard, when customer is using the back up load, the neutral cable between the inverter back up part and neutral cable from grid connected part must be jumped together. Installer can jump cables at the bottom of inverter or on the neutral bar.

b. 5048D-ES back up max power output is 4.6kW, however there is further load definition must be compliant by using back up mode (or off grid scenario). When using the inverter as off grid system, once the back up load is oversize, the inverter's fault light will blinking and inverter will shut down for self-protection.

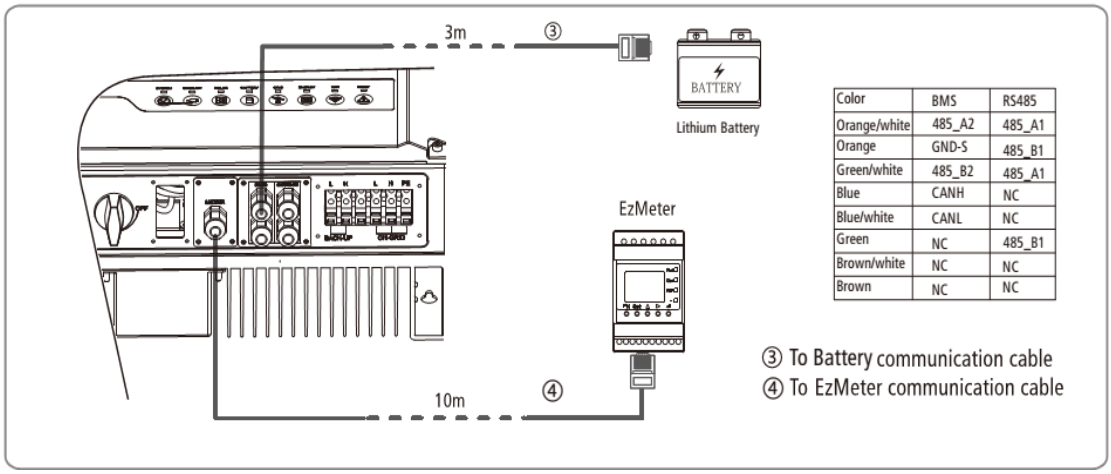
[4]BACK-UP Load configure specification:
Inductive load: Single inductive load max power ≤1.5kVA,Total inductive load power≤2.5kVA;
For example :Such as Air conditioner, Washer, Electric motor etc is inductive load;
Capacitive Load :Total capacitive load power ≤3.0kVA;
For example :Such as computer, Switch power etc is capacitive load;

c. Do NOT connect the grid to inverter's back up part under any scenario. The inverter could be damaged if there is power flows into the inverter from back up part.

d. To improve the system reliability, Goodwe recommends installer to install a changeover switch between back up load and grid tied load. Then for rare case, if the inverter is faulty, customer could manual switch all essential house loads back to the grid side.

1.3 Data cable connection

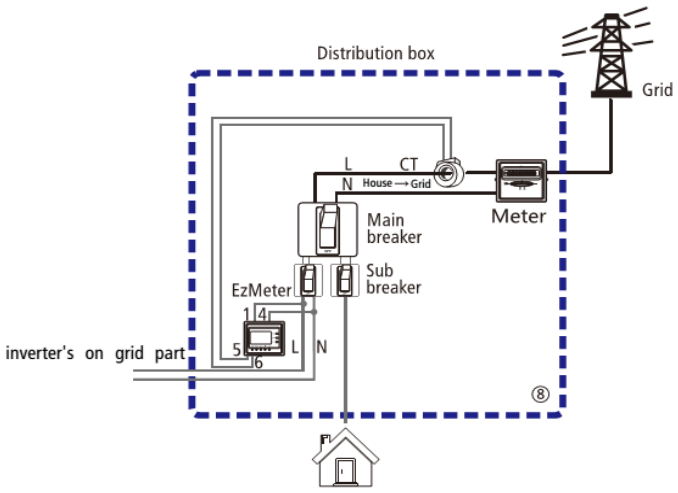
5048D-ES needs to communicate with Ezmeter (in the package box) and the BYD battery for normal operation. These communications are both through premade factory CAT5 cables.



Color	BMS	RS485
Orange/white	485_A2	485_A1
Orange	GND-S	485_B1
Green/white	485_B2	485_A1
Blue	CANH	NC
Blue/white	CANL	NC
Green	NC	485_B1
Brown/white	NC	NC
Brown	NC	NC

To the meter

5048D-ES inverter offered together with an ezmeter which is for monitoring the load.



Attention point:

a. Part 1 on top of meter connects to power cable; part 4 on top of meter connects to neutral cable for powering up the meter.
b. CT position is between the main switch and the customer power meter.
c. CT clamp has its direction:

There is clear label on CT to indicate the right orientation. On the label, HOUSE indicates house side, GRID indicates GRID side.

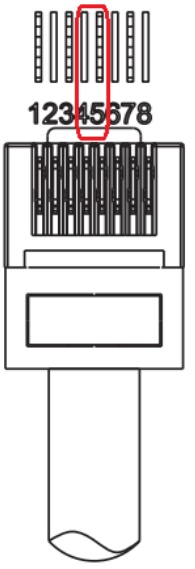
To wrongly put the meter, the monitoring will have abnormal data. If the house load is unusual high and equal to PV plus Grid, then this indicates the CT clamp connected reversely wrongly.

d. Check the CT tiny cable connected to the meter, the part 5 is white cable, part 6 is black cable.

e. The premade factory cable to ezmeter on inverter can be unplugged and plug the new one if the distance is not long enough.

To the battery

Cut the crystal terminal off, remake the data cable to only have Blue on pin 4, Blue/White on pin 5.



T568B

PIN	Color	Function
1	Orange/white	RESERVED
2	Orange	RESERVED
3	Green/white	RX_RS-485B
4	Blue	RESERVED
5	Blue/white	RESERVED
6	Green	RX_RS-485A
7	Brown/white	TX_RS-485B
8	Brown	TX_RS-485A

Then refer to BYD manual for giving the battery address, set up physical cable between batteries.

Turn the system ON:

Procedure of turning system ON:

Turn the PV firstly, following by battery, then ac grid after physical wiring completed.

The inverter LED indicator lights will start to be ON. The indication of each LED is below:

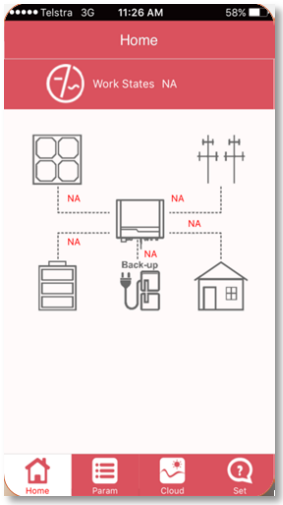
SYSTEM	BACK-UP	SOLAR	BATTERY	GRID	ENERGY	Wi-Fi	FAULT
Green	Green	Blue	Blue	Blue	Yellow	Yellow	Red

INDICATOR	STATUS	EXPLANATION
SYSTEM		ON = SYSTEM IS READY
		BLINK = SYSTEM IS STARTING UP
		OFF = SYSTEM IS NOT OPERATING
BACK-UP		ON = BACK-UP IS READY / POWER AVAILABLE
		OFF = BACK-UP IS OFF / NO POWER AVAILABLE
SOLAR		ON = SOLAR INPUTS #1 AND #2 ARE ACTIVE
		BLINK 1 = SOLAR INPUT #1 IS ACTIVE / #2 IS NOT ACTIVE
		BLINK 2 = SOLAR INPUT #2 IS ACTIVE / #1 IS NOT ACTIVE
		OFF = SOLAR INPUT #1 AND #2 ARE NOT ACTIVE
BATTERY		ON = BATTERY IS CHARGING
		BLINK 1 = BATTERY IS DISCHARGING
		BLINK 2 = BATTERY IS LOW / SOC IS LOW
		OFF = BATTERY IS DISCONNECTED / NOT ACTIVE
GRID		ON = GRID IS ACTIVE AND CONNECTED
		BLINK = GRID IS ACTIVE BUT NOT CONNECTED
		OFF = GRID IS NOT ACTIVE
ENERGY		ON = CONSUMING ENERGY FROM GRID / BUYING
		BLINK 1 = SUPPLYING ENERGY TO GRID / ZEROING
		BLINK 2 = SUPPLYING ENERGY TO GRID / SELLING
		OFF = GRID NOT CONNECTED OR SYSTEM NOT OPERATING
Wi-Fi		ON = Wi-Fi CONNECTED / ACTIVE
		BLINK 1 = Wi-Fi SYSTEM RESETTING
		BLINK 2 = Wi-Fi ROUTER PROBLEM
		BLINK 4 = Wi-Fi SERVER PROBLEM
		OFF = Wi-Fi NOT ACTIVE
FAULT		ON = FAULT HAS OCCURRED
		BLINK = OVERLOAD OF BACK-UP OUTPUT / REDUCE LOAD
		OFF = NO FAULT

The same label is on left side of inverter.

Part 2: APP configuration

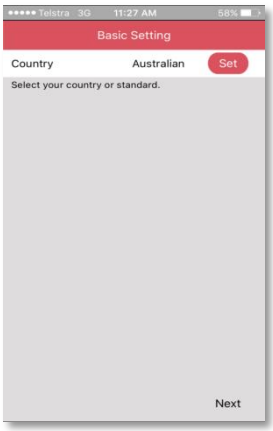
Goodwe offers the free Ezmanage APP for set up the system, please download the APP from Apple store and Android shop.



2.1 Fristly, connect mobile&tablet to 'solar-wifi' on the device, password is 12345678

2.2 Then open the 'ezmanage'

2.3 Select the ES series



2.4 Push 'Set' button

2.5 To Basic setting page, type in the password 'Goodwe2010'

2.6 Select the country: In Australia, we offer Australia, AU Ergon, AU Energex

When select the AU ergon or AU Energex, it will follow these local special standards.

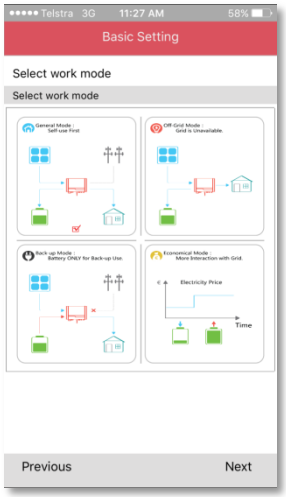
2.7 Push 'Next' to select the working mode.

For standard system, please select the general model which is maximum self-consumption.

For off grid system, please select the off grid model

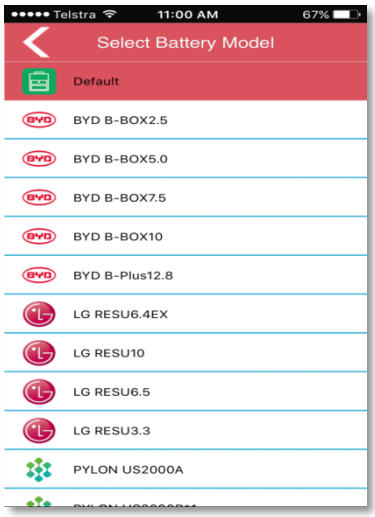
If customer requires charge from or discharge to grid in specific period, then select Economical Mode for defining the charge/discharge period.

Power limit means the charge/discharge rate. Ie, if the charge power limit is 50%, it means the inverter charge from grid at 2.3kW (50% of 4.6kW).



2.8 Push ‘Next’ to select the battery type

So far, Goodwe offered B-BOX2.5 – 10, four options, depends on the real battery bank.



2.9 Once selected the battery type, push the start button.

Ezmanage will pump out the window to enquire whether restart the inverter for saving these settings. Push ‘YES’ then inverter restarts itself for saving settings.

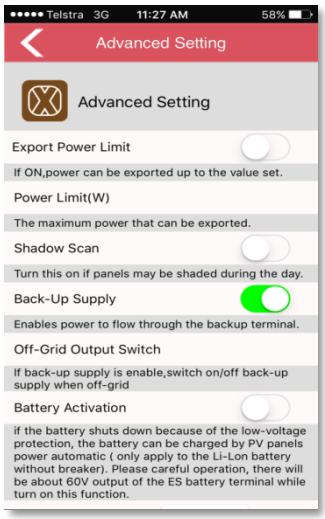
2.10 For customer who is using back up wiring and zero export function:

Still push the ‘Set’ button, then push the ‘advanced setting’.

The password ‘Goodwe2010’

a. To open the back up function.

Simply turn the back up supply button from left to right (green colour). Once selected, push the ‘Return Arrow’ back to main page. Ezmanage will pump out the window enquire for restarting the system. Push ‘YES’ then inverter will restart itself automatically.



The back up indicator light on inverter will be solid to indicate the back up function is ON.

SYSTEM	BACK-UP	SOLAR	BATTERY	GRID	ENERGY	Wi-Fi	FAULT
Green	Green	Blue	Blue	Blue	Yellow	Yellow	Red

b. To open the export power limit.

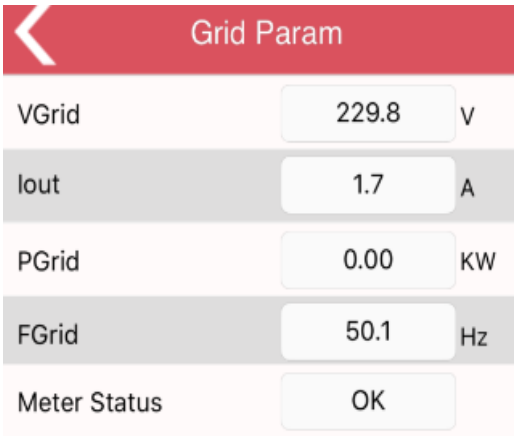
Simply turn the export power limit function on. It is not only 0kW export. Customer can define the max power export limit by type in the number in W in Power Limit table.

Part 3: System Review

To ensure Goodwe 5048D-ES is communicating with BYD Box and Goodwe ezmeter, there are two parts need to be checked.

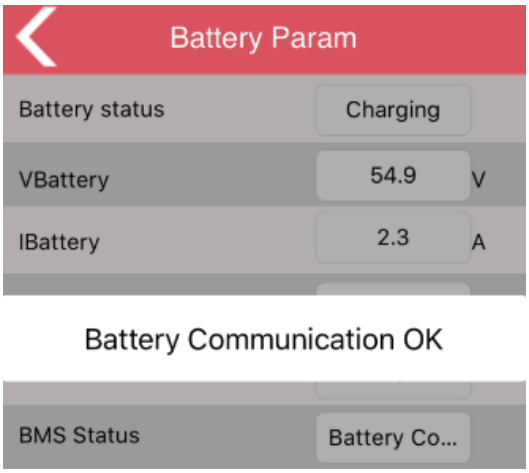
a. Meter Status

Since finish part 1 & part 2, still connect the mobile to the solar wifi. Push the 'Param' on home page, push the 'Grid', the meter status should be 'OK'.



b. Battery Communication

Push the 'Param' on home page, push the battery, the battery BMS status should be 'Battery Communication OK'. (Need to push the Battery Com to see the full indication)



Once confirmed these two communications are OK, then the system is fully commissioning.

Part 4: WiFi set up

Goodwe 5048D-ES inverter has two ways for monitoring.

a. Direct monitoring

Customer could use mobile to connect the solar-wifi, and open the ezmanage for instantaneous data monitoring on ezmanage home page.

b. Cloud monitoring

Customer can connect the inverter to local wifi, then register on Goodwe cloud for remote monitoring.

The procedure is below:

4.1 Connect the mobile&tablet to Solar-WiFi still

4.2 Open IE, Chrome, Safari and type in the IP address below

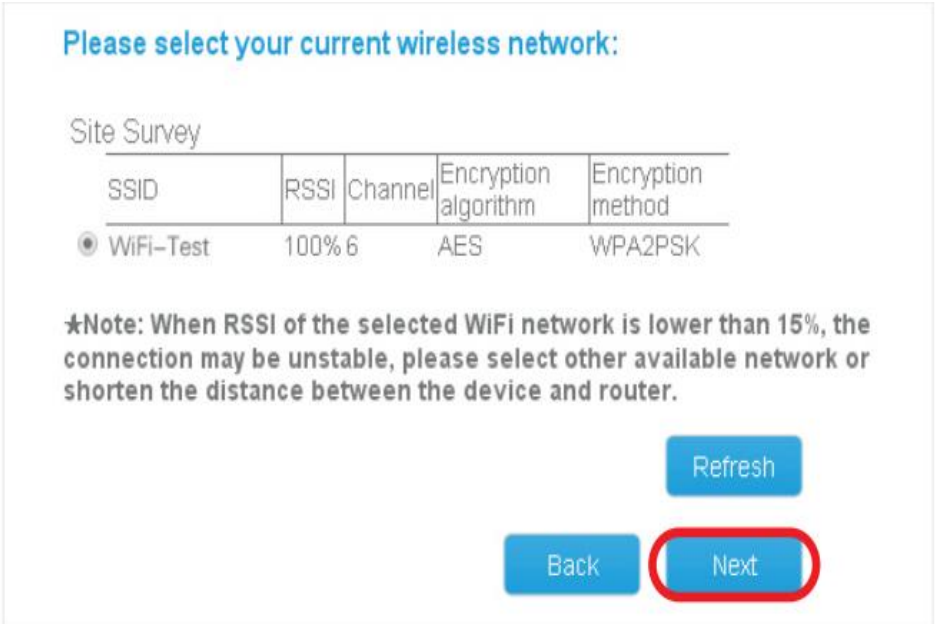
Browse website: http://10.10.100.253

4.3 type in the user name and password in the Security window

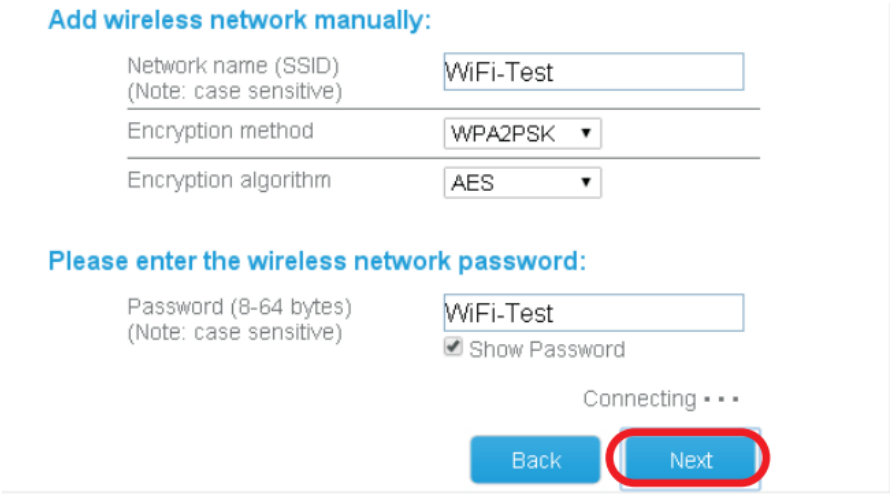
Enter User name:'admin',Password:'admin'

4.4 Push 'Start Setup'

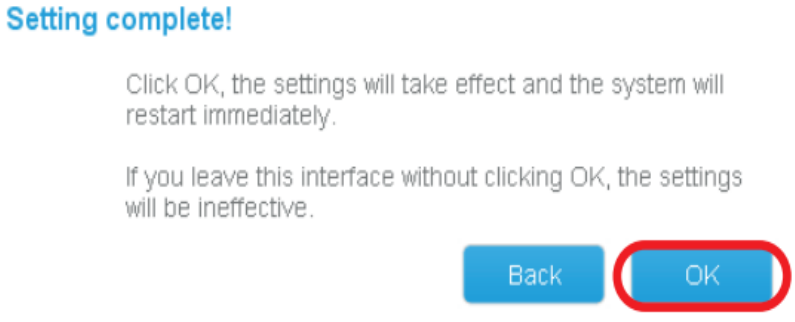
4.5 Select local wifi name



4.6 Type in the password (case sensitive)



4.7 Push 'OK' to save the setting



Attention:

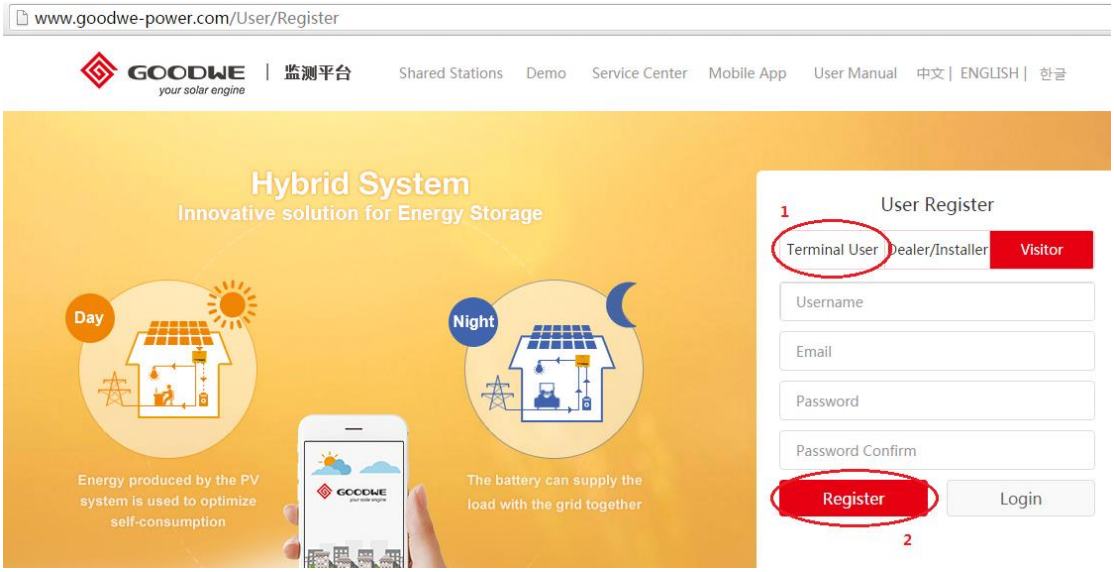
Once the WiFi set up procedure has finished, **the WiFi LED light on inverter will be steady ON**.

SYSTEM	BACK-UP	SOLAR	BATTERY	GRID	ENERGY	Wi-Fi	FAULT
Green	Green	Blue	Blue	Blue	Yellow	Yellow	Red

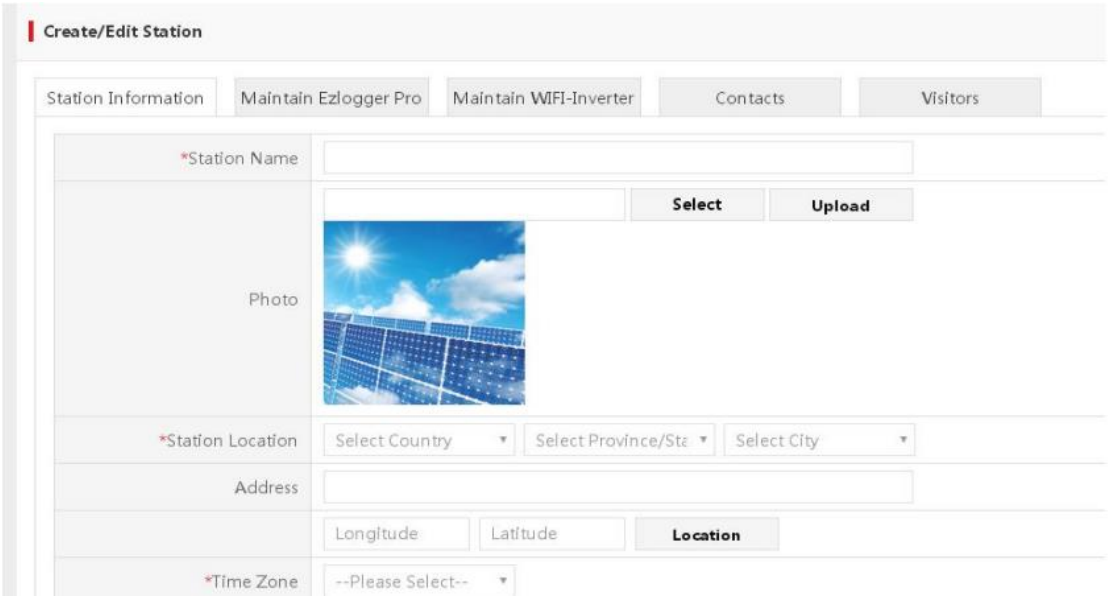
Part 5: Cloud Account Registration

As installer, please follow the step below to register account.

5.1.1 www.goodwe-power.com



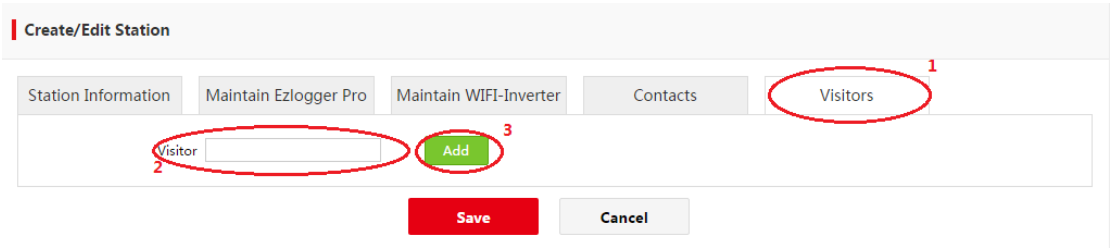
5.1.2 Edit the station with basic info



5.1.3 Put the inverter info

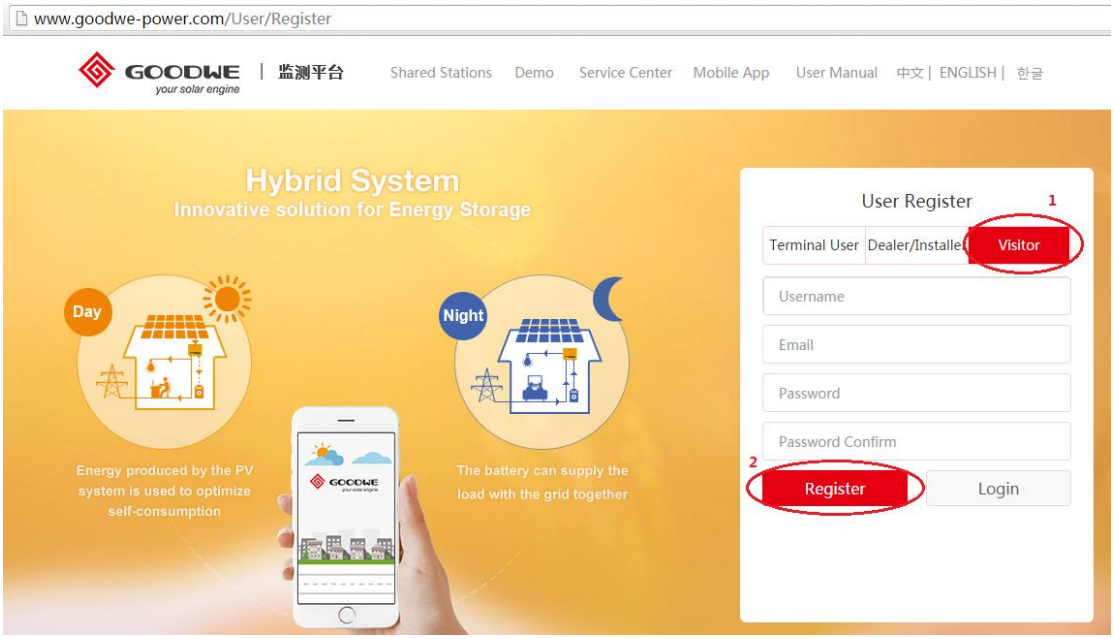
Just need S/N and Check Code (which is together on the label), keep Type and Description blank, then push 'Add' button.

5.1.4 Link this station to End User’s Visitor account by typing the End User’s Email.



Then as installer, the account has been registered.

As End User, once installer registered his account and follow the procedure to create this solar station, end user can register on portal as visitor.



Then installer and end user can see the same station by using their own log in detail.

Part 6: Check List

Task	Check Ticket
Physical Power connection	
PV polarity on DC part	☐
Battery physical connected	☐
AC cable connect on inverter	☐
(optional) if using back up, the back up neutral has been jumped together with grid neutral	☐
Data Cable connection	
Remake the Data cable to the B-Box BMU (blue to pin 4, blue/white to pin 5)	☐
Data cable to the ezmeter	☐
Ezmeter CT clamp position (between main breaker and meter)	☐
Ezmeter CT clamp orientation (House to Grid)	☐
Turn the System On and Run Ezmanage	
Country, model, battery type has been defined in basic setting	☐
(optional) turn the zero export or back up supply on in advanced	☐
System Review	
Meter Status is OK	☐
Battery BMS is OK	☐
(optional) monitoring checking	
Process the wifi connection, and the WiFi LED light is steady ON	☐
Register the installer account following procedure	☐
Register the end user account as visitor	☐