

## Return Serial Number Sheet to NeoVolta Inc.

If difficulty, refer to full installation manual or call **NeoVolta at (858) 226-4936 Mon-Fri, 8am-5pm PST**

Installer (Company): \_\_\_\_\_

Installed Component	Serial Number
NV14 (left side by disconnect)	
Inverter (left side by green push button)	
WiFi logger (on logger and box)	
Battery 1 (upper left) NV14	
Battery 2 (lower left) NV14	
Battery 3 (lower right) NV14	
NV24 (left side of cabinet)	
NV24 Battery 4 (bottom shelf)	
NV24 Battery 5 (top shelf)	

**Homeowner Information:**

Name (First and Last): \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, and Zip Code: \_\_\_\_\_

Date Installed: \_\_\_\_\_

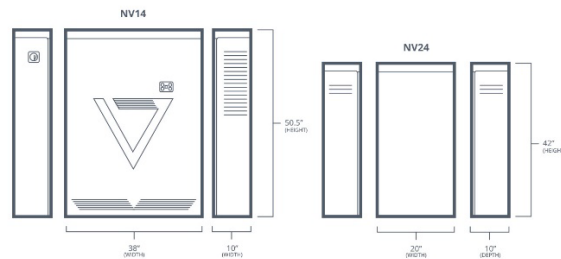
Installed Inside or Outside? \_\_\_\_\_

Zero Export to CT? \_\_\_\_\_

Battery Reserve %? \_\_\_\_\_



# NeoVolta NV14 and NV24 Quick Install Instructions



## PHYSICAL INSTALL OF NV14 and/or NV24

- Determine location of NV14 and/or NV24 unit and Critical Load Subpanel.
  - The NV14 needs **4 inches** of clearance on the left side (Disconnect assess) and **4 inches** of clearance of the right side for heat exhaust.
  - If installing NV24, it needs to be no closer than Four inches and no further than two feet from the NV14 (left, right, or opposite side of wall).
- NV14 and/or NV24 must be mounted on solid foundation (concrete, pavers, etc.) to support 570 pounds.
- Add 40 Amp breaker (120/240 V) to the main service panel and connect to the NV14 Utility Grid Input PASS THROUGH using conduit/wire. No breaker, simply two positive 120 V and one neutral passthroughs.
- Connect solar to the NV14 PV AC breakers (if solar input is AC) or to the PV1 / PV2 DC input (if solar is DC).
  - Up to 9,200 W AC PV, 8,448 W DC PV, and/or up to 10,000 W combined AC and DC PV.
- Install provided Eaton sub panel and provided 40 Amp input breaker.
- Once solar is installed, pull up to FOURTEEN 15 and/or 20 Amp breakers (120V) from the main service panel to the new Eaton Subpanel utilizing no more than 32 Amps. Installers can pull more circuits IF they conduct an Amp study. You must consider start up Amps for all motors/compressors/pumps. These circuits will be powered via the NV14, grid on or off. Matching Neutral wires must be located and moved to the Subpanel or a ground loop will occur.
- Once Critical Load breakers are pulled, connect the NV14 AC Load Output breaker to the critical load subpanel input breaker using appropriate conduit (two positives, one neutral and one ground).

## CONNECT SOLAR TO NV14 (AC, DC and/or both AC/DC)

- The NV14 can accept 9,200 watts of Solar AC power (string or micro-inverter). We can accept 8,448 Watts of DC solar (two MPPS with 5000 W, 500 V, and 26 Amps max each). Or we can accept a combination of AC and DC solar, but this is limited to 10,000 Watts combined. DC Fuses are 15 Amps. Call if you need higher Amp Fuses.

## INSTALLING BATTERIES

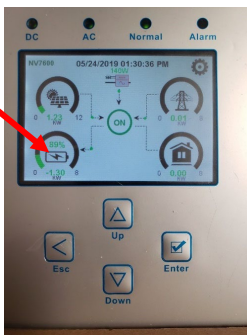
- Take batteries out of their boxes. Change the white toggle pin settings as follows:
  - **Battery One** Must be set with the **pin one up**, the rest down (LCD position 2).
  - **Battery Two** Must be set with **pin two up**, the rest down (LCD position 3).
  - **Battery Three** Must be set with **pins one and two up**, the rest down (LCD position 4).
  - NV24 **Battery Four** Must be set with the **pin three up**, the rest down (LCD position 5).
  - NV24 **Battery Five** Must be set with **pins one and three are up**, the rest down (LCD position 6).
- Remove the upper bracket for upper battery.
- For NV24 installation, connect the positive and negative battery connections into the NV14 prior to installing the NV14 batteries. The positive and negative terminals land on the positive/negative terminals under the inverter inside the NV14. The ground lands on the ground bar at the top on the NV14. The NV24 communications connection lands on the upper left battery inside the NV14.



- Place all three NV14 batteries into the cabinet.
  - For the NV14, the three batteries (with specific pins) can go into any position.
  - For the NV24, the two batteries (with specific pins) can go into any position.
- Connect all NEGATIVE battery connections, then connect all POSITIVE battery connections.
- Connect all RS485 communications cables.
  - NV24 upper battery connects to the lower battery. The lower NV24 battery connects to the upper left NV14 battery via the 10-foot RS485 cable.
  - NV14 upper left battery connects to the lower left battery.
  - NV14 lower left battery connects to the lower right battery, **which connects to the inverter.**
- Replace upper battery retaining brackets for the NV14. For the NV24, there are upper/lower recessed tabs that should be pulled out to secure the upper/lower batteries.
- Level the cabinet by adjusting the cabinet legs. This will assist with installing the cabinet cover.

### COMMISSIONING THE SYSTEM

- Turn NV14 40 Amp Main Service Panel breakers on.
- Turn on NV14 AC/DC disconnect switch on upper left outside of the unit.
- **Use provided paperclip to turn on EACH battery (press reset button of 1-2 seconds).**
- Turn on NV14 inside inverter disconnect switch and press ON the green inverter button.
- The system takes 3 minutes to wake up. You should see green AC and Normal lights above LCD screen.
- Flip the Critical Load Output Breaker up/on. Flip on the critical load sub panel 40 Amp input breaker and then each 15/20 Amp breaker one at a time.
- Flip the AC Solar and/or DC input breakers / fuse blocks up/on.
- Meter all inputs and output for 120/240 V.
- Press The Battery icon on the main LCD screen.



Press on the Li-BMS in the lower right

You should see three lines of info for the NV14 and five lines of info for the NV24. This assures that the batteries are communicating. If this information is not correct, then try resetting the communications cables into the batteries.

	Volt	Curr	Temp	SOC	Energy	Charge Volt	Charge Curr	Fault
1	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
2	47.99 V	2.80 A	0.0 C	30.2%	30.2Ah	54.0V	110.0A	0000
3	47.97 V	2.40 A	7.2 C	37.5%	40.8Ah	54.0V	110.0A	0000
4	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
5	47.97 V	3.00 A	18.0 C	35.4%	37.9Ah	54.0V	110.0A	0000
6	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
7	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
8	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
9	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
10	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
11	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
12	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
13	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
14	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000
15	0.00 V	0.00 A	0.0 C	0.0%	0.0Ah	0.0V	0.0A	0000

# Battery Power to the Main Service Panel (MSP) Option

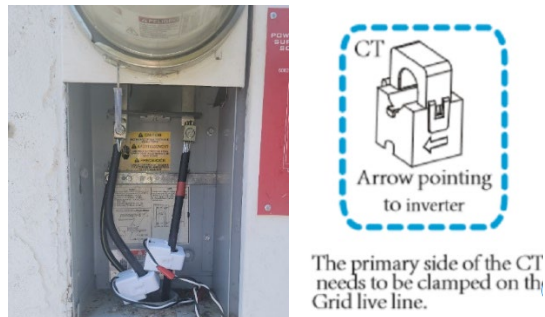
Many utility companies charge more for energy between 4 pm and 9 pm (Time-of-Use) or charge more when Tier thresholds are exceeded.

The NV14 inverter automatically discharges battery power to the provided critical load sub-panel after 4 pm when there is no longer sufficient solar to satisfy those loads.

As of May 2022, the inverter can also discharge battery power to the MSP after 4 pm. This option will further reduce Utility dependence but will also discharge battery power faster.

This is accomplished in 2 steps, described below:

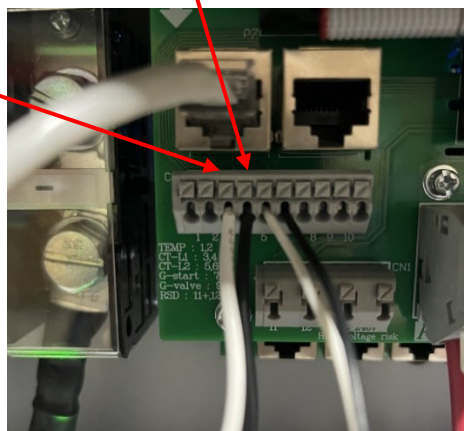
**Step 1 A:** Add the TWO provided Current sense Transformers (CTs) to the MSP L1 and L2 input feeds.



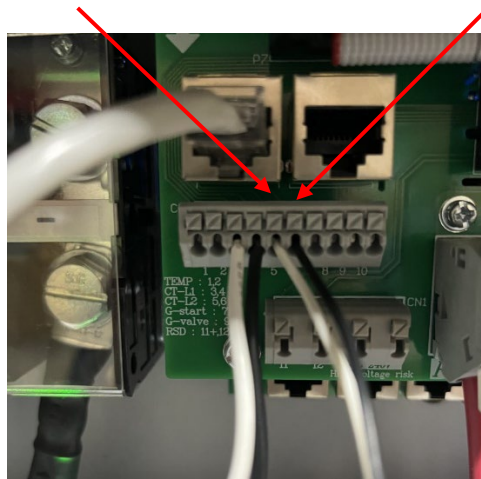
Ensure that the CT arrows are pointing away from the MSP and towards the NV14 inverter:

**Step 1 B:** Keep CT 1 and CT 2 white and black wires paired. The wires are 10-feet in length. Feed these wires through conduit to the NV14. These can be feed via the same conduit used for the NV14 Utility connection via the 40 Amp breaker.

**Step 1 C:** Open the bottom cover of the inverter (four hex bolts). Just below the Battery communications RS485 connection is a bank of CT mode clamps. Connect CT 1 white wire to pin THREE and CT 1 black wire to pin FOUR by depressing the grey plastic input tensioner.

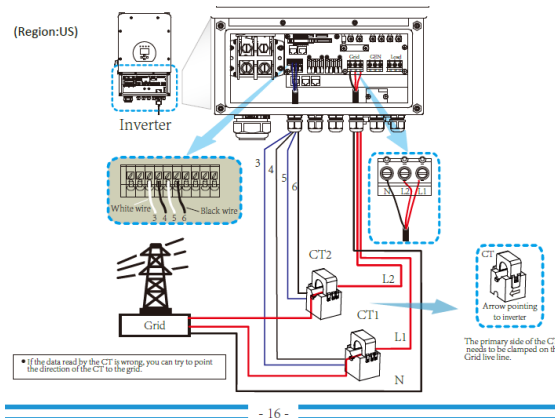


Connect CT 2 white wire to pin FIVE and CT 2 black wire to pin SIX by depressing the grey plastic input tensioner.



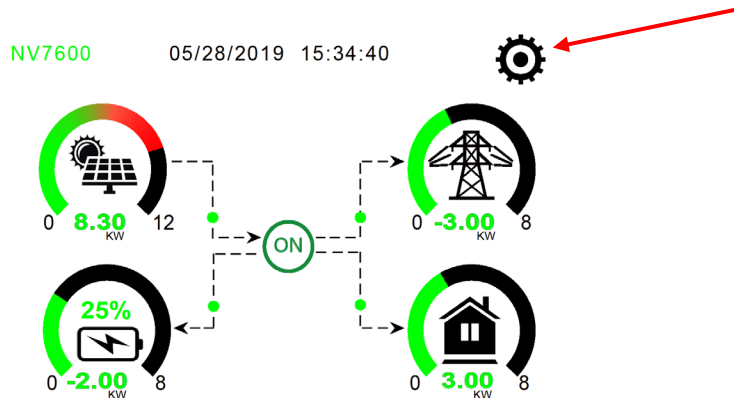
Bolt the inverter bottom cover back into place.

Wiring Diagram for these connections:

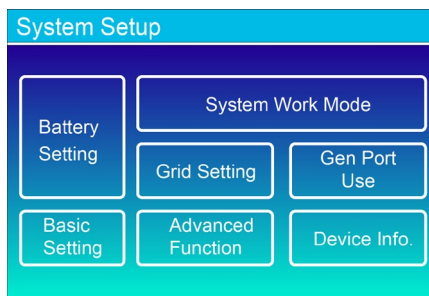


Step 2 programming the inverter:

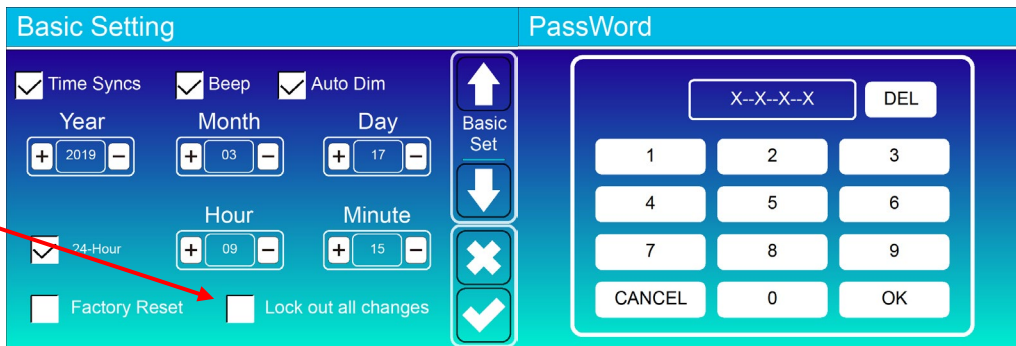
**Step 2 A:** Go to the Settings Pages by pressing on the System Set Up Menu Icon:



**Step 2 B:** Press Basic Settings:



If Lock Out All Changes is selected, then tap it to uncheck it. Then press the big check in the bottom right corner. Then enter Authorization Code 7, 7, 7, 7 and then press OK.

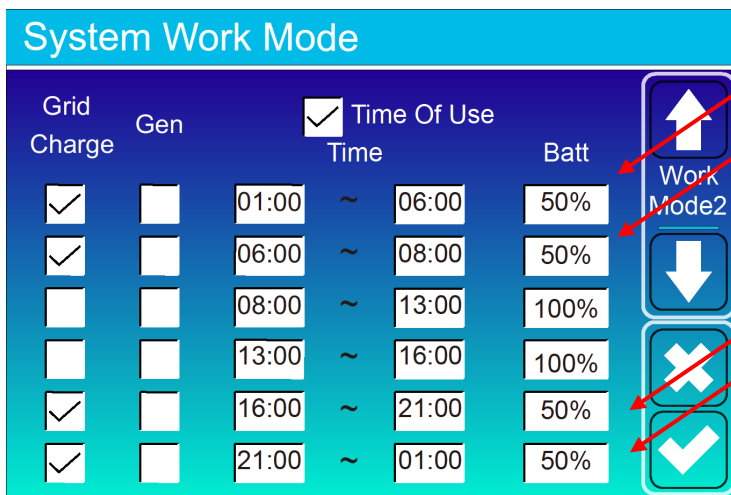


**Step 2 C:** Go to System Work Mode. The system is preset to “Zero Export to Load.” Press on “Zero Export to CT” so that the circle fills in. Then press the large check mark in the lower right corner:



**Step 2 D:** Go to System Work Mode. Ensure that changes saved. If they did, then press the down arrow on the right side of the LCD screen. You are on System Work Mode page 2. Systems are preset with Battery discharging to 22% daily. By sending battery power to the MSP you will greatly increase usage of the battery. It is recommended that you limit discharge to 40% or 50% if the customer is concerned with grid outage. If you allow the battery depletion to 22% minimum, then if the grid goes down there will be no power available for the critical loads. The customer will be in black out until the grid returns or until solar recharges the battery to 28% for the NV14 or 26% for the NV14 plus NV24.

Recommend the following changes:

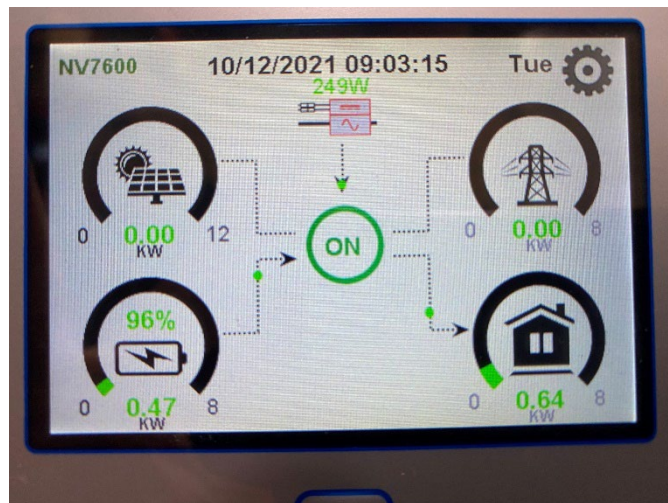


Setting 50% next these times means that the battery will be allowed to discharge as needed (critical loads and MSP) to 50%. If the grid goes down, then the battery will discharge to the Critical load Sub-Panel only to 22%. This allows time for the grid to return or for solar to come on.

If the grid goes down, then the battery will discharge to the critical load sub-panel down to 22%. At 22% with grid off and no solar, the customer will be in a full blackout. The inverter will stay on and will send a 240 V pre-charge to an AC Solar System or 48 V pre-charge to a DC Solar System. When the Solar System reaches 125 V, solar production will occur. When the battery recharges to 28% (NV14) (26% for the NV14 plus NV24), the critical load sub-panel will again be powered.

**Step 2 E:** Press the ESC escape button under the LCD screen. You are on the Main Screen.

Now look at the main display to see how power will flow from the battery to supplement what is being generated by solar for the load demand.



Please advise NeoVolta if “Zero Export to CT” is being used via the Serial Number sheet that is to be returned to NeoVolta.



# SOLARMAN SMART Connection for iPhones and Android Phones

- Connect the WiFi logger antenna with bracket to the 10' extension cable. Connect the extension cable to the DB9 connection at the top left side of the NV14. Antenna COM light is on/steady and Ready is flashing.
- Customer load the Solarman SMART App on their smart phone:

App Store: Solarman SMART      Google Play Store: Solarman SMART



\*\*Installer CAN use their smart phone so long as you use Solarman SMART and that you log OUT prior to leaving site. Once complete, give the phone/email and password info to the customer. Make sure the customer is logged in and understands the App.

**STEP 1:** - Customer open App and click "Register." Select Phone OR email verification. **Phone is preferred.**

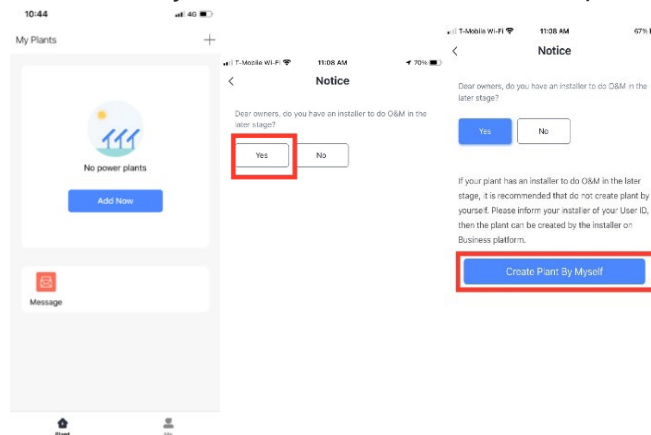
The customer text message OR mailbox will receive a Verification Code. Input the Verification Code.

① Customer phone number OR email and a password for NV14 login.

② After click "Send", Customer will receive Verification Code in the email box. Or via Phone texting.

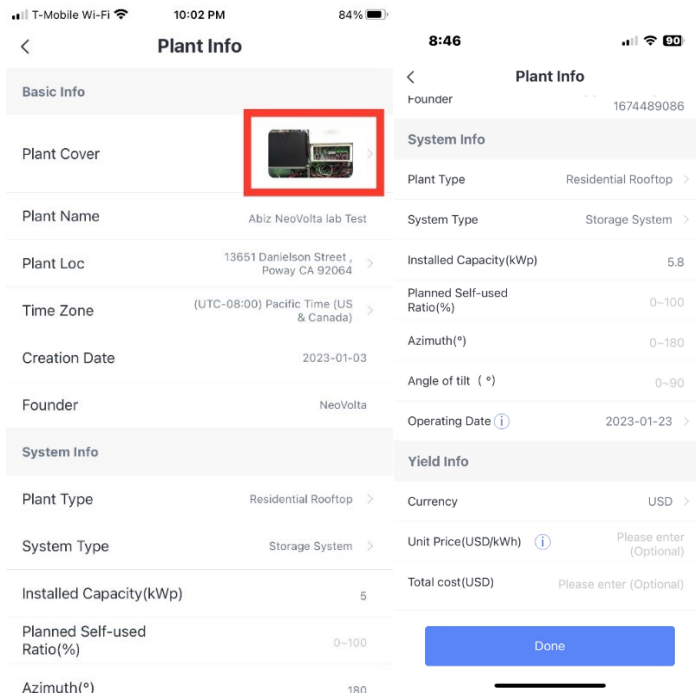
③ Password to be simple 6-8 letters and numbers. NO Special Characters. Check I agree and then DONE.

- Then, Click "Add Now" to create your plant on Solarman SMART. On the following page, please select "Yes" you have an installer. Then tap "Create Plant by Myself".



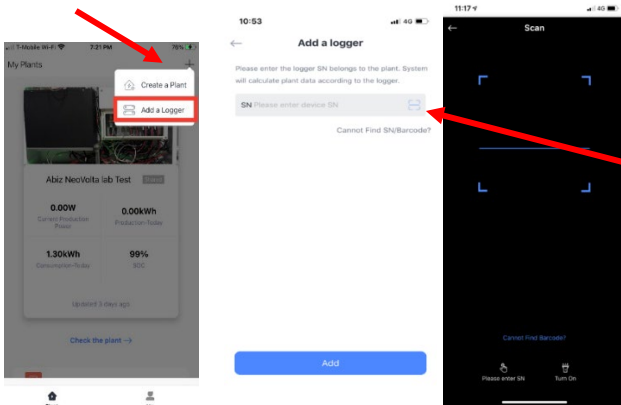
**STEP 2:** - The app will ask to confirm Plant information. Use map function to locate property address (please make sure that it registers the correct address (you can manually change it)). Set the Plant Name (customer First and Last name), set the correct **Time Zone**, enter System info- Plant type **Residential Rooftop**, System type **Storage System**. Enter approx. **size of solar system** “capacity” in kWh, and **for currency select USD**.

- After completing the plant information, click **Done** at the bottom.



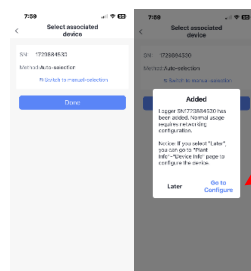
First and Last Name, Time Zone, Storage System, KW of Solar System, USD for Currency, and **Contact Number**. Then tap **DONE** at the bottom.

**STEP 3:** - Make sure that the phone is connected to the customers WiFi router (phone settings). On Upper right, click “+” and now select “Add a Logger.”

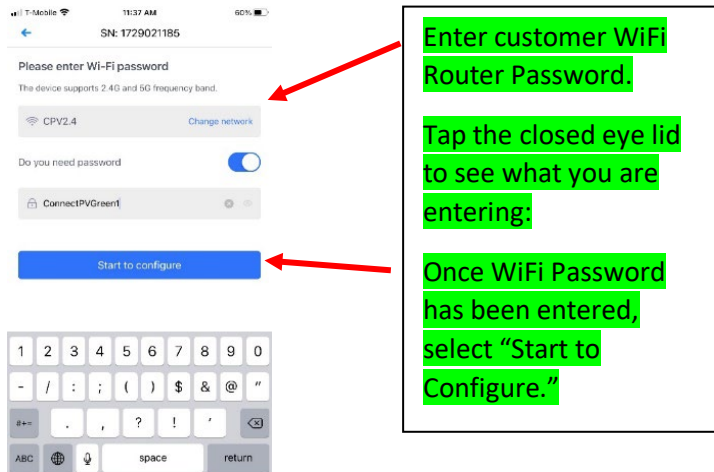


**Tap the icon on the right side of the serial number form** to add the barcode on the mobile phone scanning device. The camera will open asking to take a photo of the Antenna QR code again. Logger SN can also be manually entered, but you will also have to manually enter the passcode.

- Once Logger info has been captured, tap **DONE**. The next page select “Go tto Configure.”



- Networking Configuration: Enter the Customer's WiFi Router Password. Case sensitive. You can "open" the closed eye lid to see what you are entering.

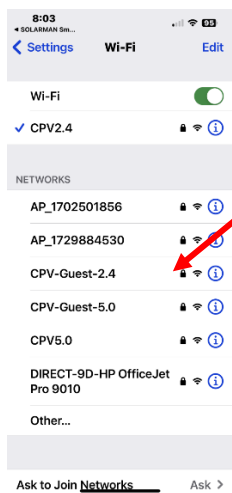


Enter customer WiFi Router Password.

Tap the closed eye lid to see what you are entering.

Once WiFi Password has been entered, select "Start to Configure."

- Then Minimize the Solarman SMART App. Go to the Phone "Settings" page and select the Logger AP\_1729XXXXXX number:



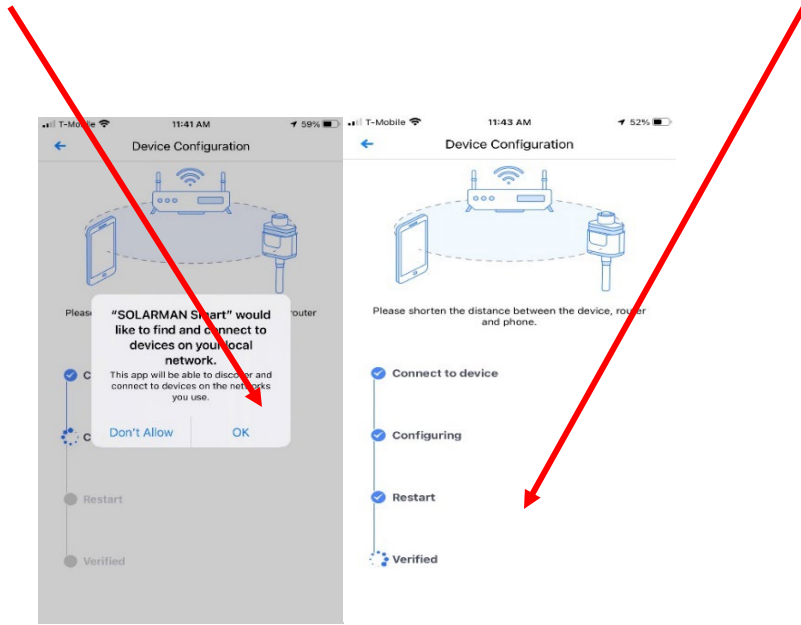
Go to Phone Settings-WLAN, find the right "AP\_XXXXXXXX" network, click "Connect". If it asks password, you can find PWD:xxxxxxx on logger.



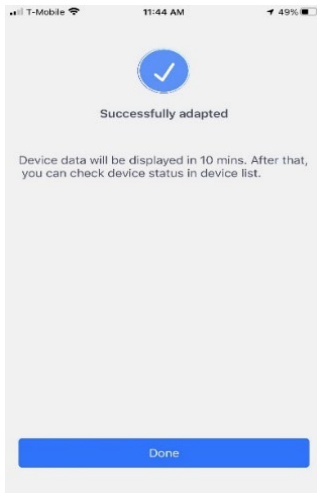
Once Logger has a blue check mark, then go back to Solarman SMART App. Device Configuration page will automatically show.

Configuration will be completed, after it shows "Successfully adapted" and tap "Done".

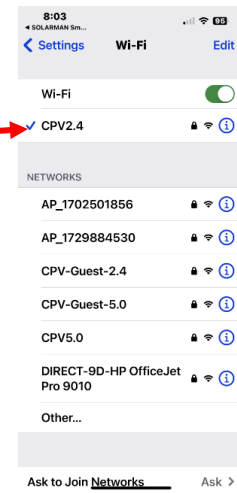
- Select "OK" to allow Logger to connect to Local WiFi Network. Logger will automatically go through these connection steps:



- Once the Logger is connectewd, select "DONE." Immediately go back to phone Settings and re-select the customers WiFi Router.

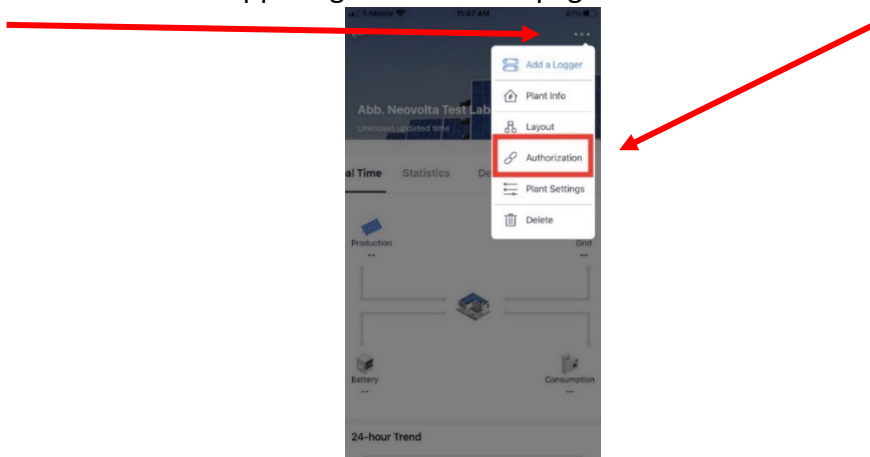


Reconnect phone to customer WiFi Router.



**STEP 4: -Plant Authorization**

- Tap three dots in the upper right of the main page. Then select Authorization.



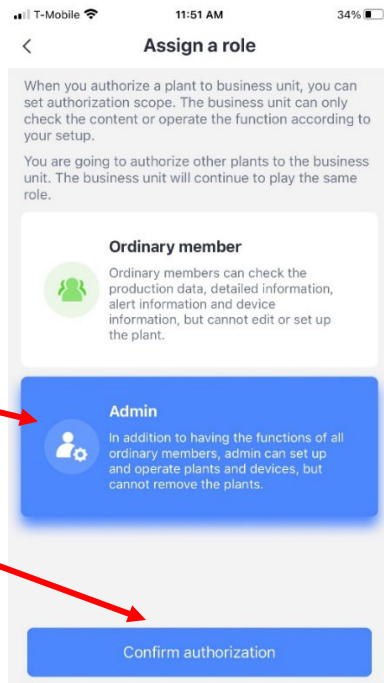
Tap **“Admin.”**

Search by typing **“Your Company Name”** into the search bar.

Tap the open box on the right next to **“Your Company name”** on the result.

Tap **“Confirm”** at the bottom of the page.

Assign a role of Admin to your Company and then **“Confirm Authorization.”**



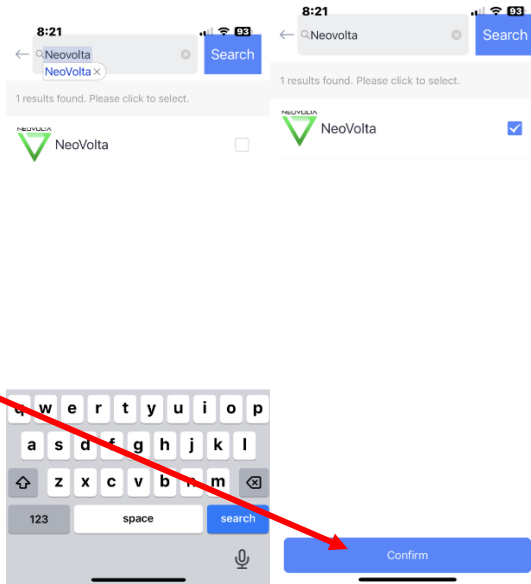
- **Immediately do the same procedure again to load NeoVolta:**

Tap **“Admin.”**

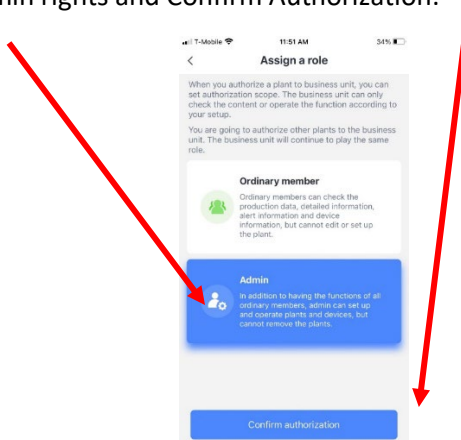
Search by typing **“NeoVolta”** into the search bar.

Tap the open box on the right next to **“NeoVolta”** on the result.

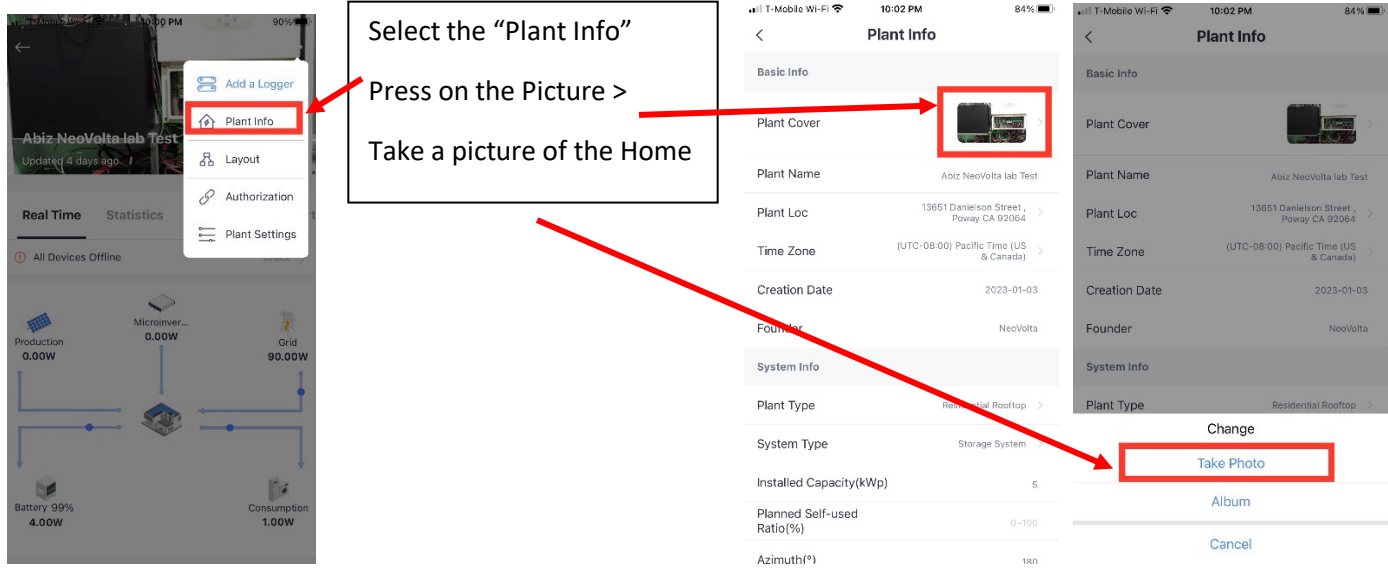
Tap **“Confirm”** at the bottom of the page.



- **Then Assign NeoVolta Admin rights and Confirm Authorization:**



- You can add or change a picture of the home on SMART App. Tap the three small dots in the upper left corner of the App. Select "Plant Info." Tap "Take Photo." Hold phone sideways (landscape). Take picture. Tap "Use Photo." Select "Choose Photo." Scroll to the bottom of the page and **tap DONE**. New Picture will load.

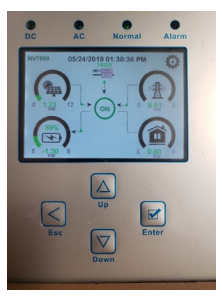


**You should see three lights on the WiFi stick logger.**

- COM light should be steady green (good communications with NV14 inverter).
- NET light should be steady green (good communications with WiFi router in home (if not steady, then use 10' cable to move WiFi stick logger to location with better signal (higher up).
- Ready light should be flashing green (meaning that system is connected and communicating with WiFi router).

**YOU ARE DONE!!!**

(The App typically builds the battery info first, then Home info, then Grid info, then AC and DC solar last)



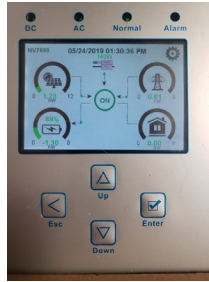
You want this screen to be present when you install the cover. Press the ESC button to get to main page.

Put the cover on with included bolts. Level the cabinet to assist with easier cover installation. Remember to tighten the opposite corners first, then the remaining opposite corners, then the middle bolts. Make sure that the White bolt cover caps are accessible as the Installer will place White caps into the access holes once City/County Inspections have passed.

## Once WiFi is connected

**YOU ARE DONE!!!** Takes 20 Minutes to fully build App Data the first time.

(The App builds the battery info first, then Home info, then Grid info, and AC and/or DC PV info last)



You want this screen to be present when you install the cover. Press the ESC button to get to main page.

Put the cover on with included bolts. Level the cabinet to assist with easier cover installation. Remember to tighten the opposite corners first, then the remaining opposite corners, then the middle bolts. Make sure that the White bolt cover caps are accessible as the Installer rep will place White caps into the access holes once City/County Inspection has passed.