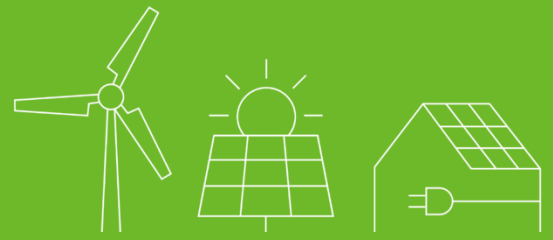
Maximize your Solar Potential with New Residential and Commercial Solutions from Growatt



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Business Focus

Growatt is a new energy enterprise dedicated to
the R&D and manufacturing of PV inverters, Energy Storage, EV Charger, and Smart Energy Management solutions.

PV Inverter

Energy Storage

EV Charger

Portable Power

About GROWATT

Remarkable volume of global cumulative shipments

PV Inverters Shipment

Storage Inverters Shipment

6M+
Cloud users

3.1M+
Inverter Production capacity +400K bat

180+
Countries with systems installed

4,400+
Employees

1,100+
R&D engineers

4.6%
Revenue invested in R&D for 2022

By March 20th, 2024

Global Presence

44 Representative Offices and Warehouses. Products installed in more than 180 countries or regions worldwide.

Global Leading Distributed Energy Solution Provider

GLOBAL TOP 3

Hybrid inverter Supplier

GLOBAL NO.1

Residential PV Inverter Supplier

GLOBAL TOP5

Commercial PV Inverter Supplier

Source: S&P Global Commodity Insights

Milestone History

2011

Founded in Shenzhen 2011
Established subsidiaries in Australia and Hong Kong

2012

Launched Growatt 5000MTL inverter which received double A rating by Photon Lab.

2013

Established subsidiaries in US and UK

2015

Launched residential energy storage solution

2017

Ranked among global top 10 inverter suppliers according to Frost & Sullivan.

2018

Launched residential off-grid and micro-grid storage solutions

2019

Launched MIN Inverter, offering the battery ready solution for solar energy storage

2020

Launched Growatt smart home management solution – GroHome,
Ranked The Smarter E Award Finalist

2021

Established advanced manufacturing plant in Huizhou, Vietnam
Became the world's No. 1 residential inverter supplier Per Frost & Sullivan

2022

Global No. 1 residential inverter supplier per Frost & Sullivan
Launched portable power station, Won the Red Dot Award 2022 for innovative product design.

2023

Launched the commercial WIT Inverter Series and expanded C&I energy storage business

Launched the SPH inverter

2024

Global No. 1 residential inverter supplier per Frost & Sullivan

Launched vertical hardware VPP integration

2025

Became the third largest residential battery supplier by market share in the US per S&P Global

Launched SPE Off-Grid inverter

2026

Launching cloud based VPP programs

Parallel MIN Functionality

Shiner APP

Advanced Manufacturing Center

Annual Capacity of 3.1 Million Inverters and 400K Battery Packs
Highly Automated Production Line
Execute Growatt 5-Steps Quality System

Advanced Manufacturing Center Vietnam

Highly Automated Production Line
Execute Growatt 5-Steps Quality System

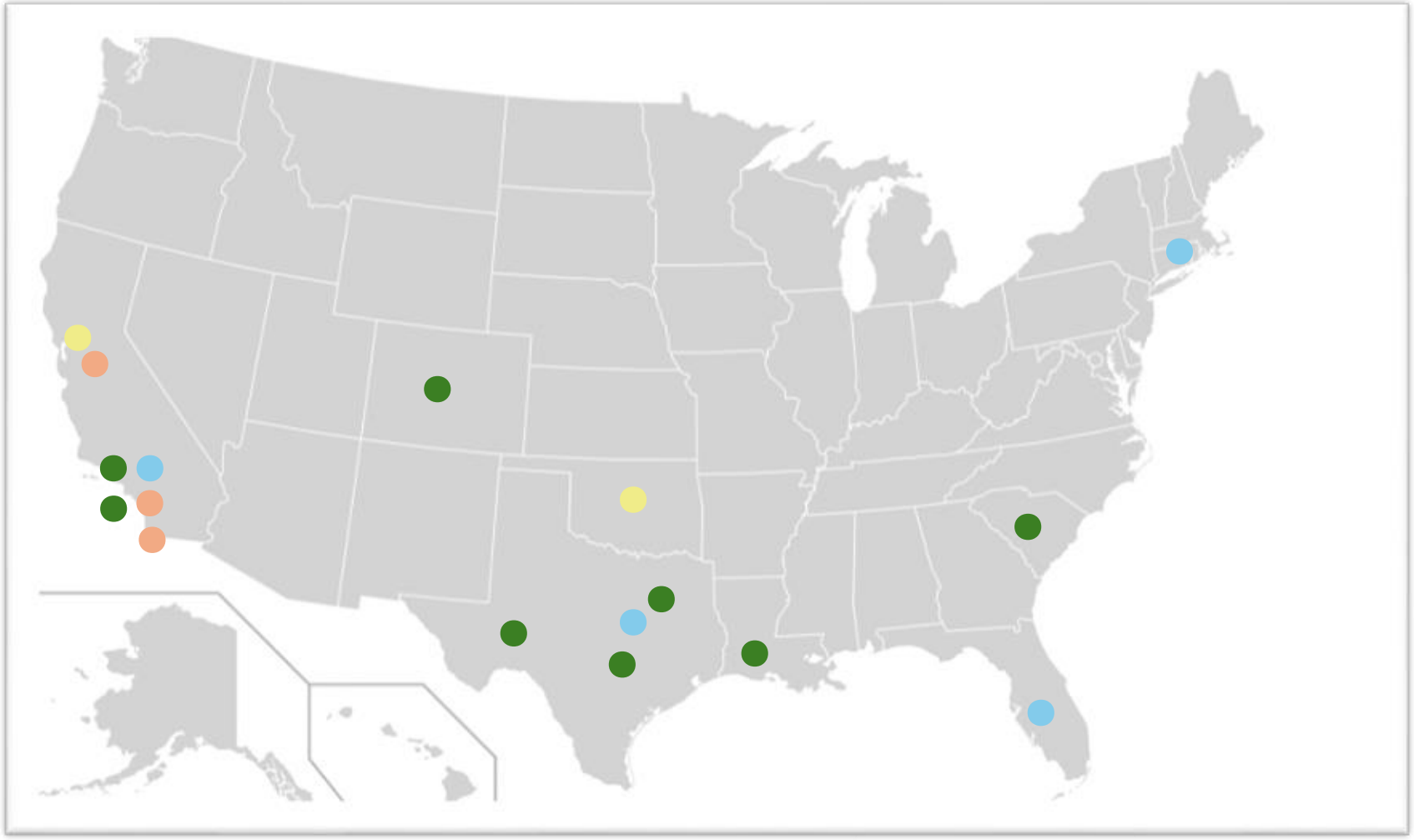
Growatt U.S.A. Team Allocation Map

Field Application Engineers

Field Service Engineers

Sales

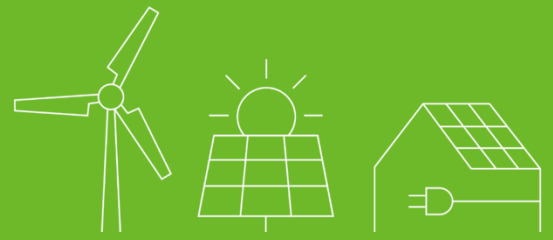
Project Managers



Call Center 7am – 6pm PST (866)-686-0298 usaservice@ginverter.com


To Build the World’s Largest
Intelligent Sustainable Energy Ecosystem for Humankind

2026 Product Introductions

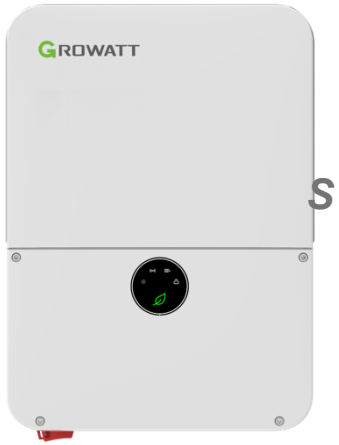


SHENZHEN GROWATT NEW ENERGY CO.,LTD

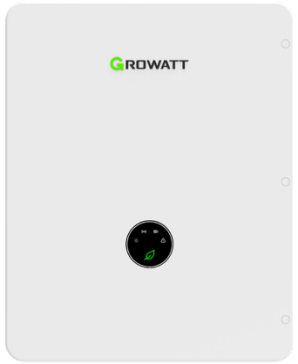
GROWATT

2026 Product Lineup

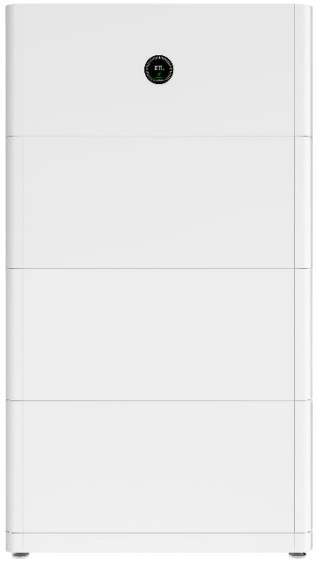
N Residential Inverter
3.5-11.4K



SYN Transfer Switch
200A

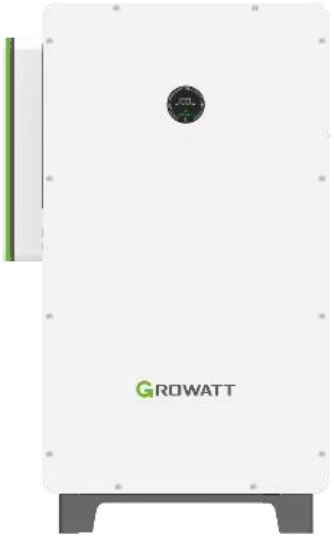


PX Battery (HV)
5-30 kWh



AC EV Charger
7-12K

WIT Commercial Inverter
28-100K



SPH Residential / Commercial Inverter
8-16K

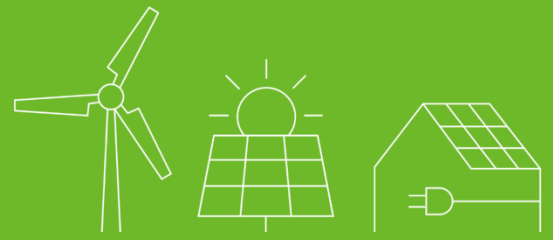
ALP Battery (LV)
5-320kWh

SPE Off-Grid Inverter
8-12K

ALP Battery (LV)
5-320kWh

Portable Power Stations
0.5-3.6 kWh

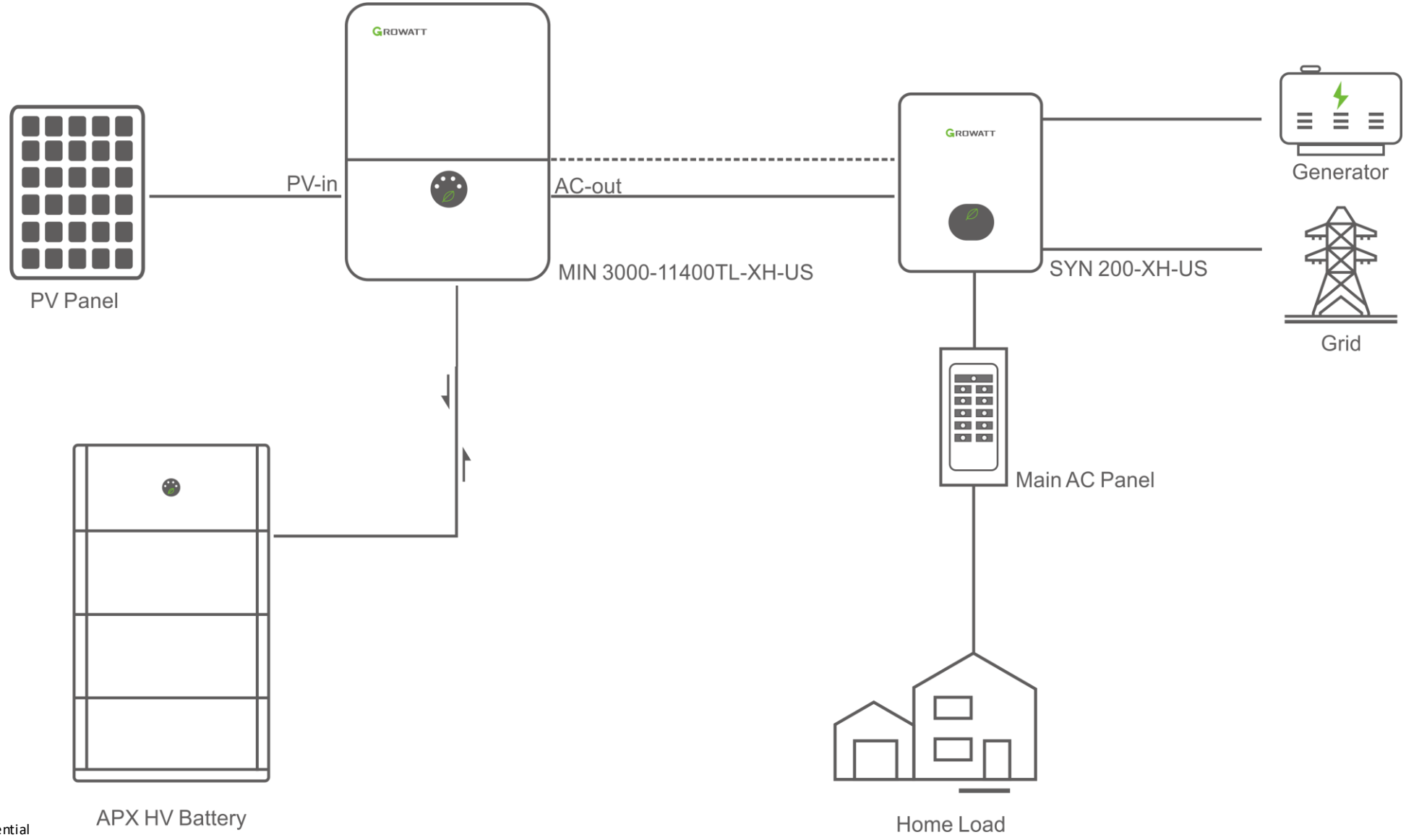
MIN-TL-XH-US Inverter



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Battery Ready PV System for Your Home



Product Overview - Battery Ready Inverter – MIN 3.5 – 11.4K

MIN TL-XH-US Single Phase Battery Ready Inverter

General

- Output Power 11400W
- Streamline design
- Compact: 3.5-11.4 kW , 7.6kW 32.3 lbs
- UPS <500 ms
- 4 MPPT’s
- Quick 15-minute commissioning
- Very low RMA rate

Protection

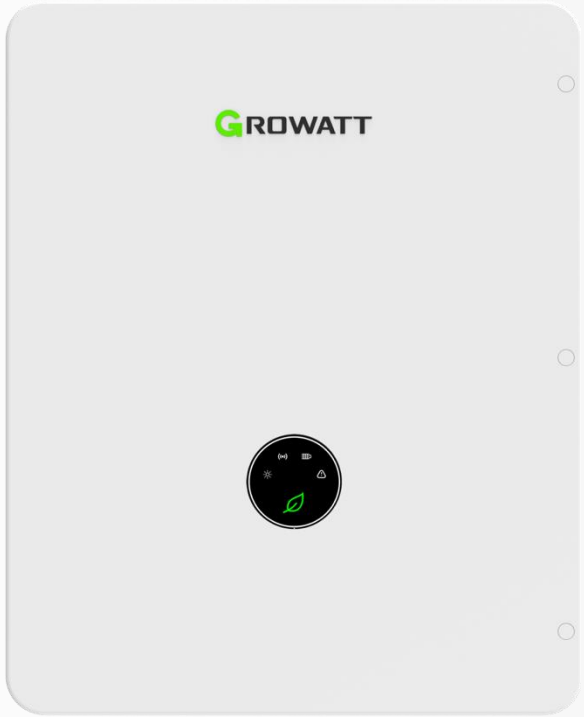
- NEMA 4X rating. Dustproof & Waterproof
- 10-year product warranty

Leading Features

- Dark start operation
- Partial and Whole home backup
- Supports generator input
- DC/AC Ratio up to 2.0
- Support RSD, AFCI and RGM meter

*Home Backup requires optional SYN backup box

Product Overview - Microgrid Interconnection Device



SYN 200TL-XH-US

Backup Capability

- Whole home backup power
- On/Off grid mode switch time within 0.5s

Easy Operation

- Integrated 200A breaker on the grid side
- Built-in split-phase transformer for 120V/240V output

Application Flexibility

- Service Entrance Rated
- Diesel Generator input available
- Remote wakeup and control function of Diesel Generator
- Support three working modes: Off-grid, On-grid, and Generator

Product Overview-APX Battery

APX HV Battery System

Flexible Expansion Design

5kWh-30kWh Scalable Energy Capacity

Harsh Environment Adaptability

Wide operating temperature range of -10°C – 50°C
IP 66 Design

Modular Energy Optimization

Modular level energy optimizer to guarantee each pack can be fully charged/discharged always
The new and old battery can be mixed at any time

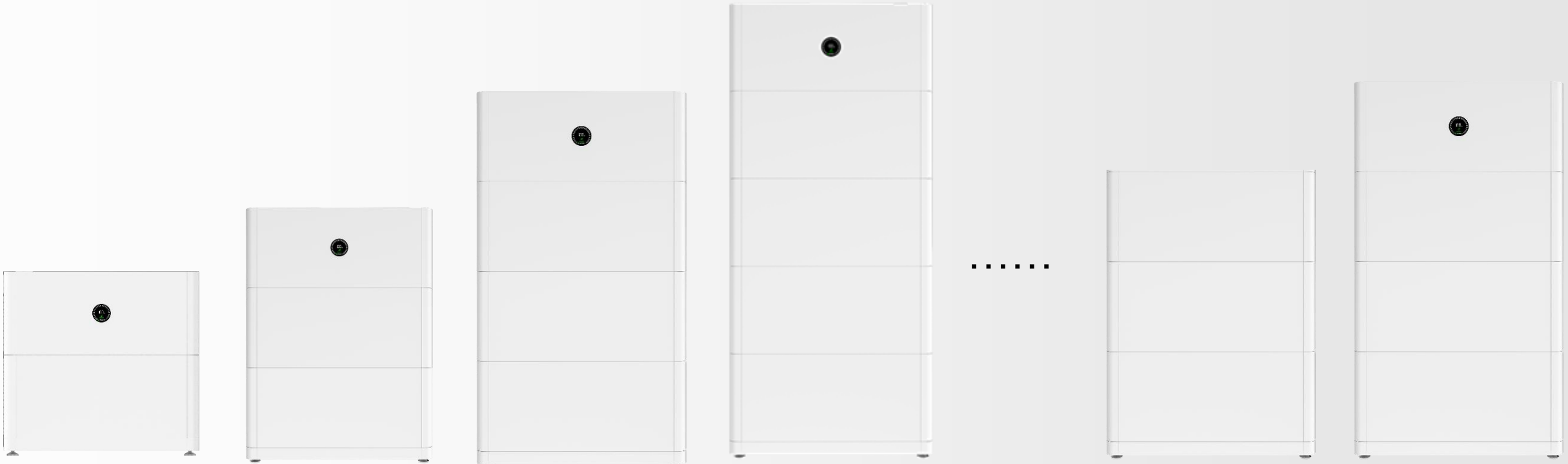
Safe and Reliable

LFP Battery Cell
Redundancy Design
Multiple Level Protection
Automatic balancing in both pack and cell

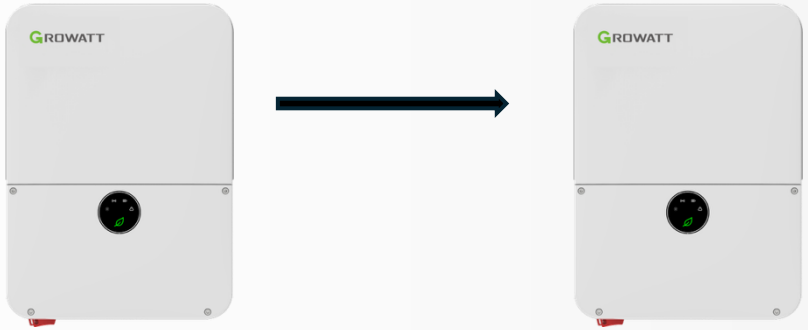
Flexible Expansion Design

Battery Expansion

Modular Design, More Flexible Expansion

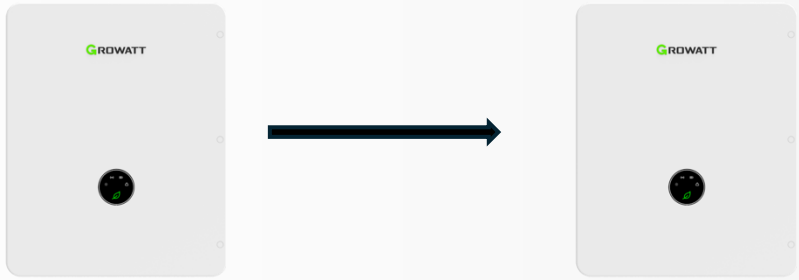


Product Overview – MIN XH2 US & SYN 23 Upgrades – Q3 2026*



MIN TL-XH-US

MIN TL-XH2-US



SYN 200TL-XH-US

SYN 23 TL-XH-US

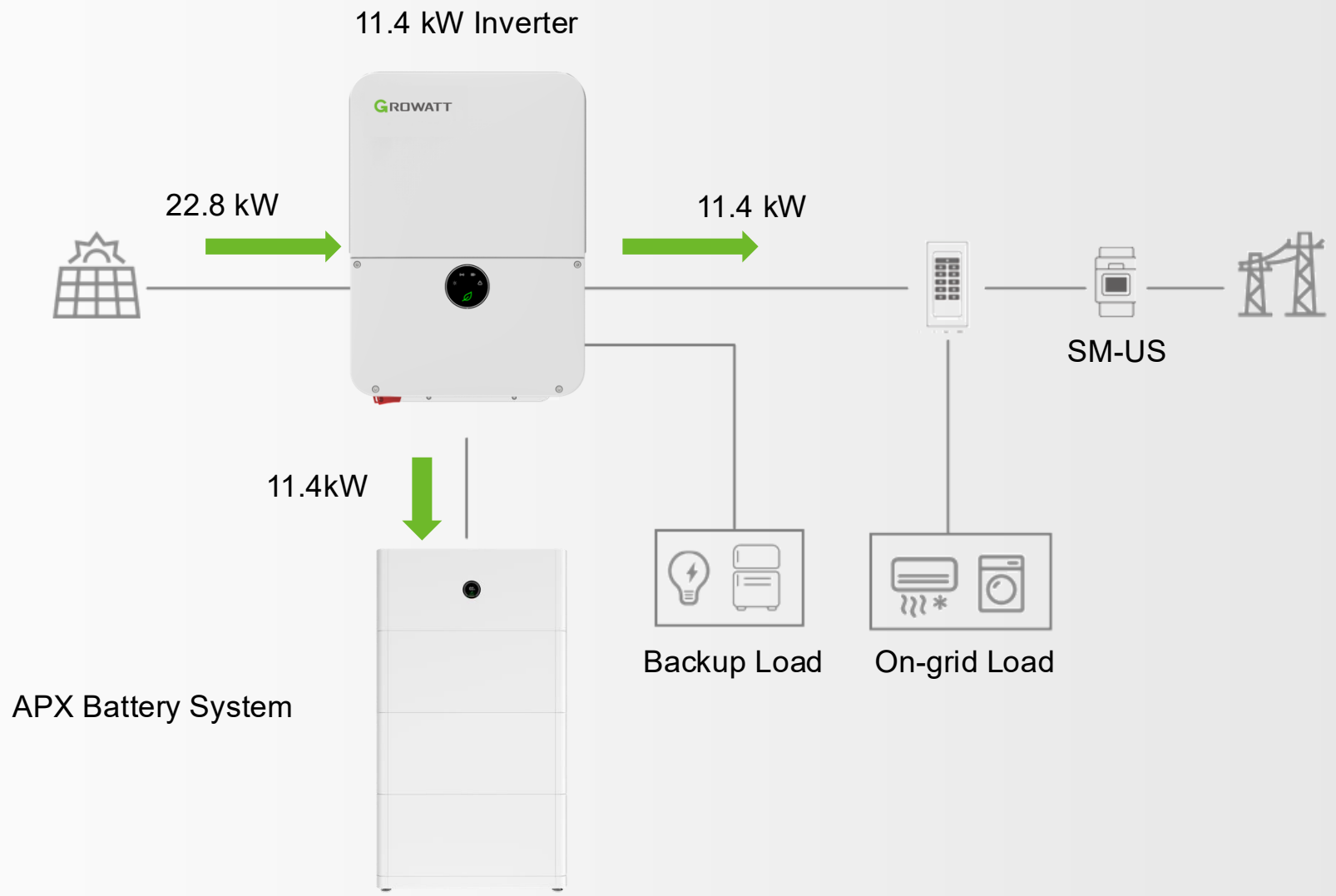
MIN XH2 Upgrade Key Differences – Q2 2026*

- Parallel functionality with single SYN
  - Up to 4 inverters (45.6K)
  - Up to 120kWh of back up
- Smart generator functionality with autostart
- Improved optimizer to reduce shading effects
- Max current per MPPT from 14>18A
- LRA increase from ~105>185
- Strings per MPPT from 2>1 for further optimization
- Lowering start up voltage form 80>50V
- Transfer time from 500ms>20ms

Key Reason to stay with the XH

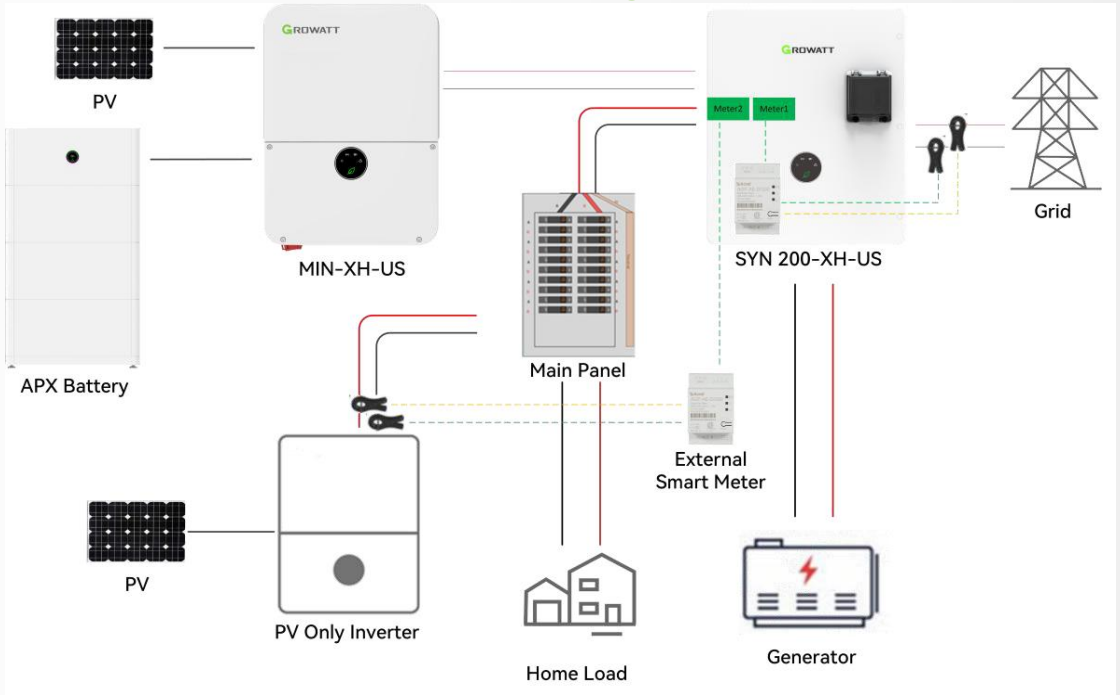
- More Cost Effective for PV only applications

MIN DC/AC Ratio - 2.0



MIN AC Coupled Solution

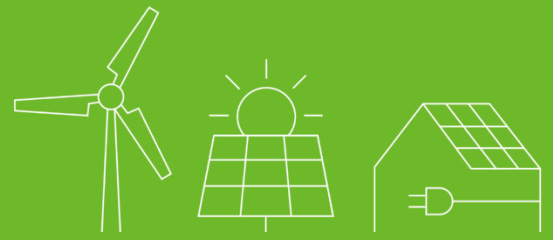
AC-Coupled Line Diagram



MIN-XH-US
AC-Coupled Solution

The MIN TL XH US allows easy integration of batteries into existing PV only systems and is perfect for AC retrofitting.

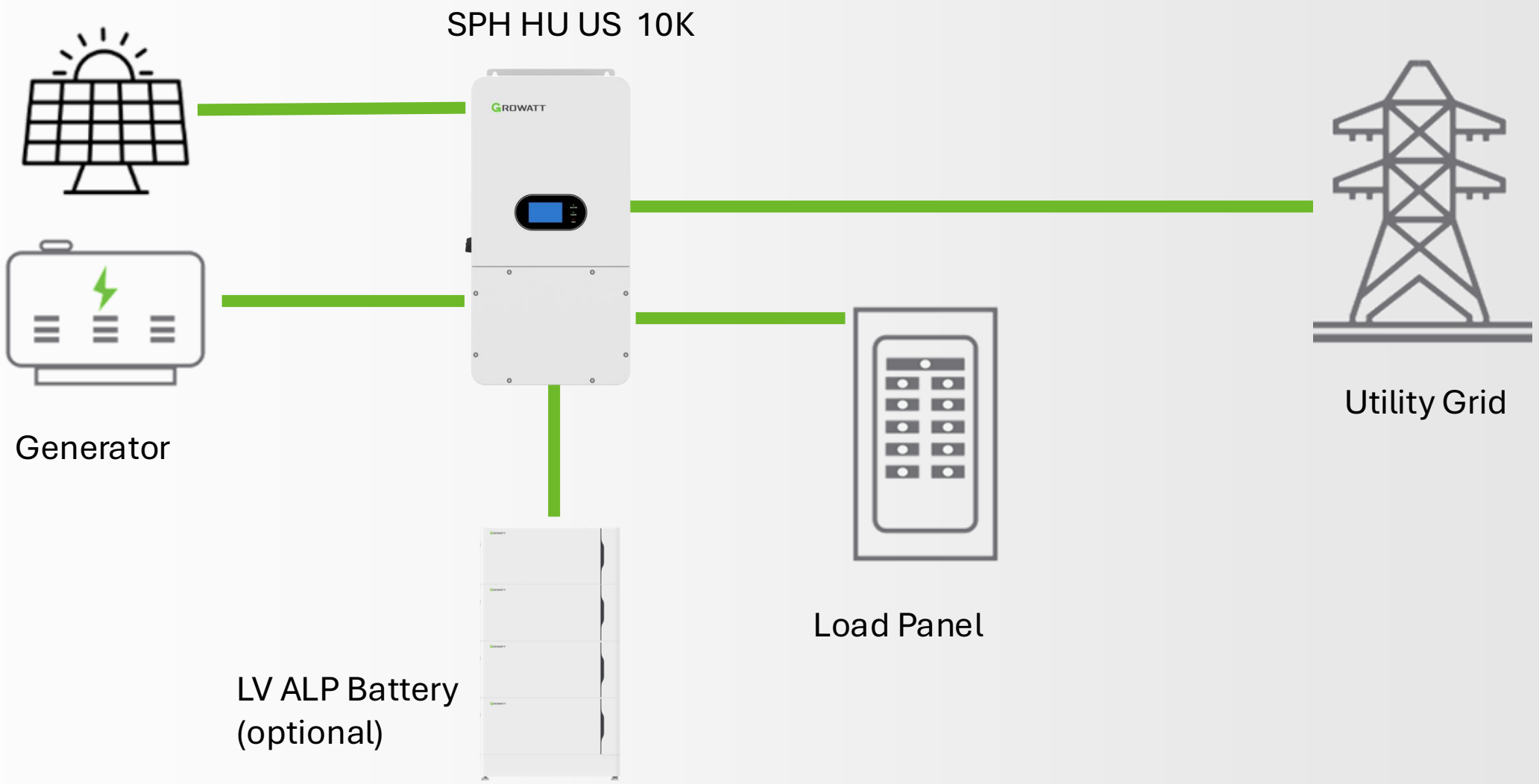
SPH 10000TL-HU-US



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Residential Whole Home Backup



Product Overview-SPH 8000-16000TL-HU-US

SPH 10000TL-HU-US

General

- Output Power:10000W
- Support 120V/208V& 240V split phase output
- UPS <10ms switch to off-grid
- Built in transfer switch
- 3 MPPT'S

Protection

- NEMA 4/IP65 rating. Dustproof & Waterproof
- 10-year product warranty

Leading Features

- Parallel 6 inverters
- Supports Direct Generator Input
- 1.5 DC/AC ratio
- Remote monitoring via WiFi or Ethernet
- Built in LAN, WiFi and 4G
- Interface with low voltage batteries

Compatible Battery

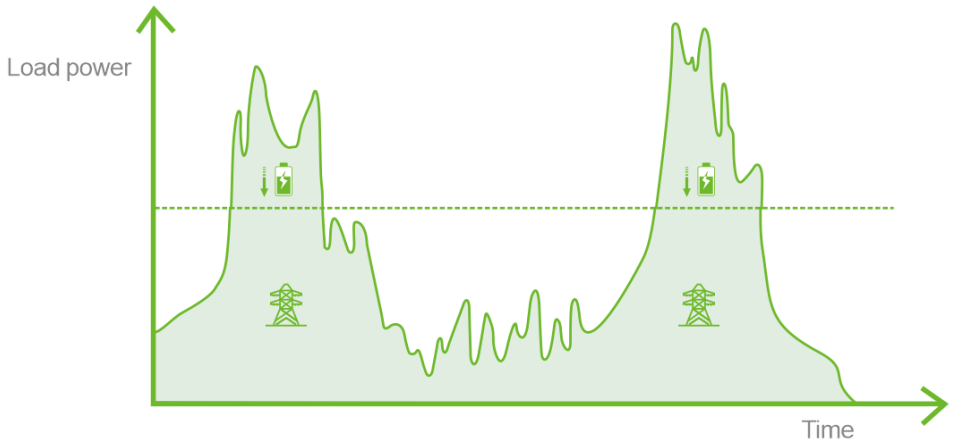
Battery Module
ALP 5.0L-E2-US

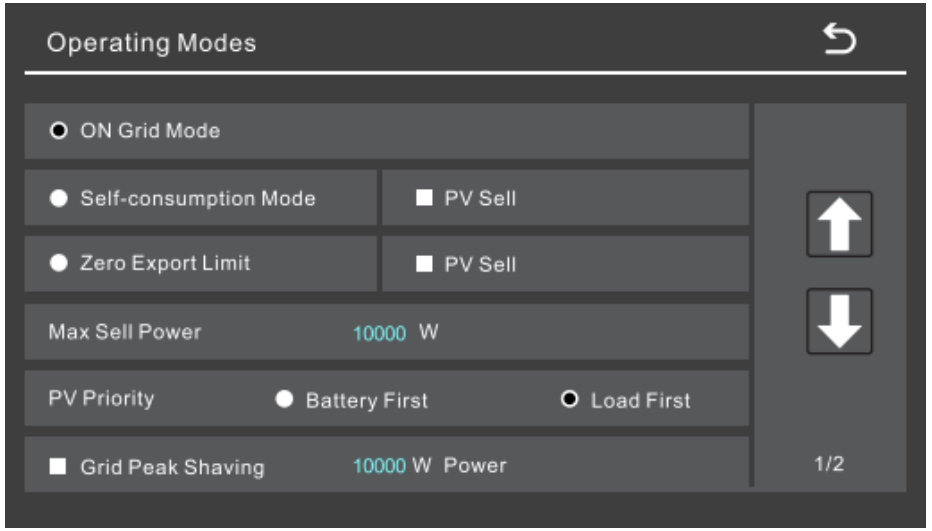
ALP Low Voltage Battery System

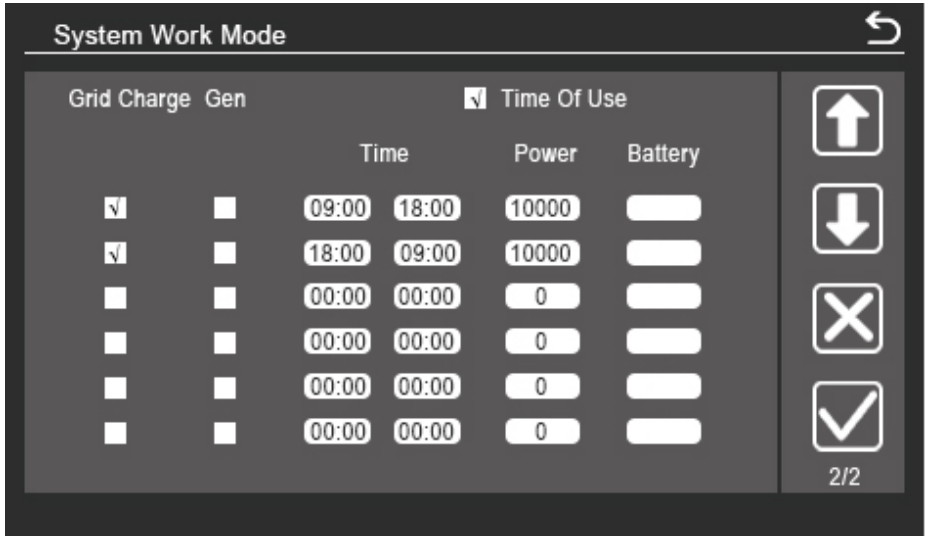
- UL9540 certification
- (IP66,NEMA 4X)
- 5.0kWh / Module
- Flexible capacity : 5.0kWh ~ 320kWh
- Excellent safety of cobalt free LiFePO4 battery
- Up to 220A per string, no need for combiner box
- Option for wall mount brackets
- Operating temp. range: -10C to 50C

Supports multiple Operating Modes

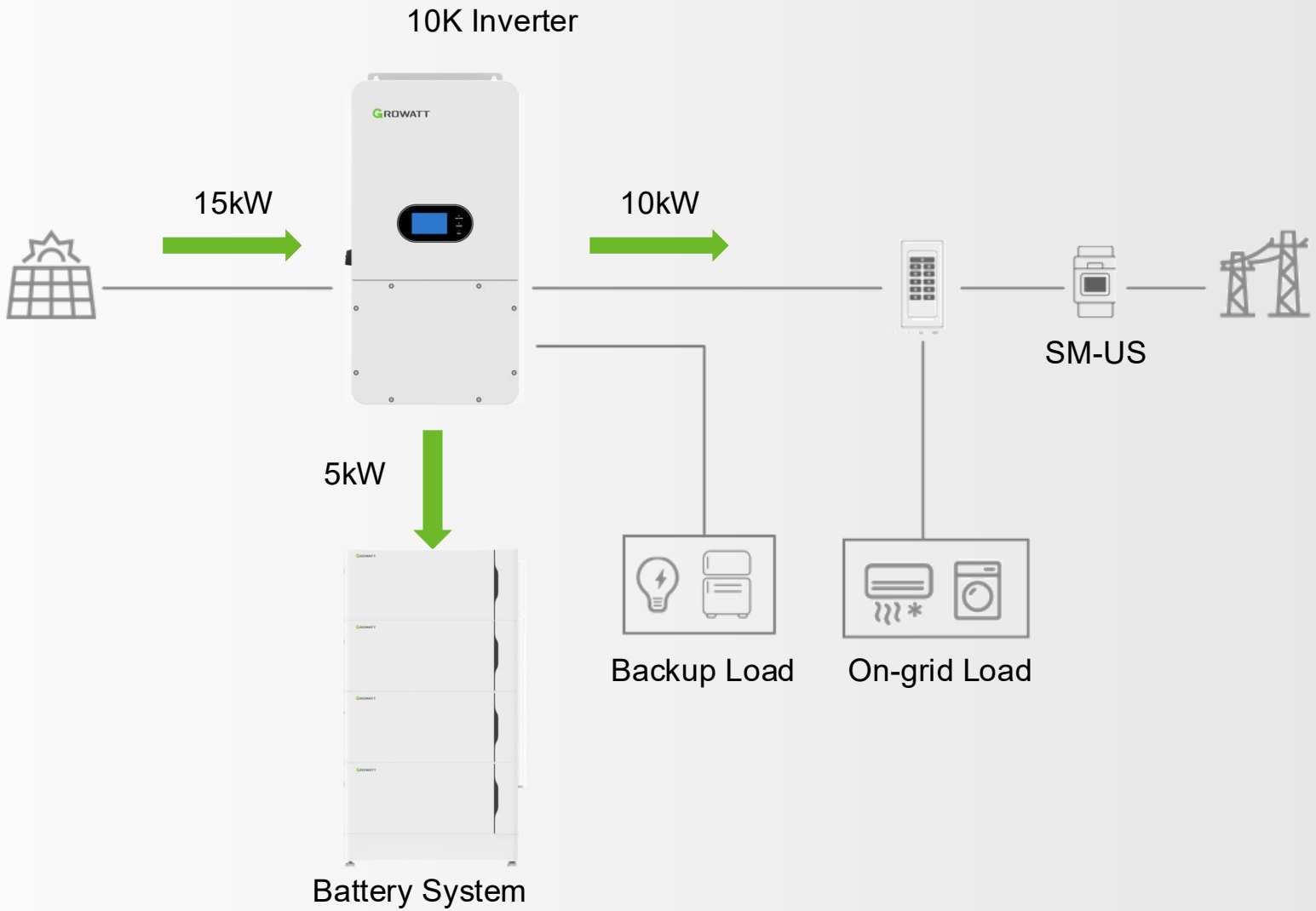
- Self-consumption + zero-export mode (requires CTs)
- Battery first
- Peak shaving (requires CTs)
- TOU schedules





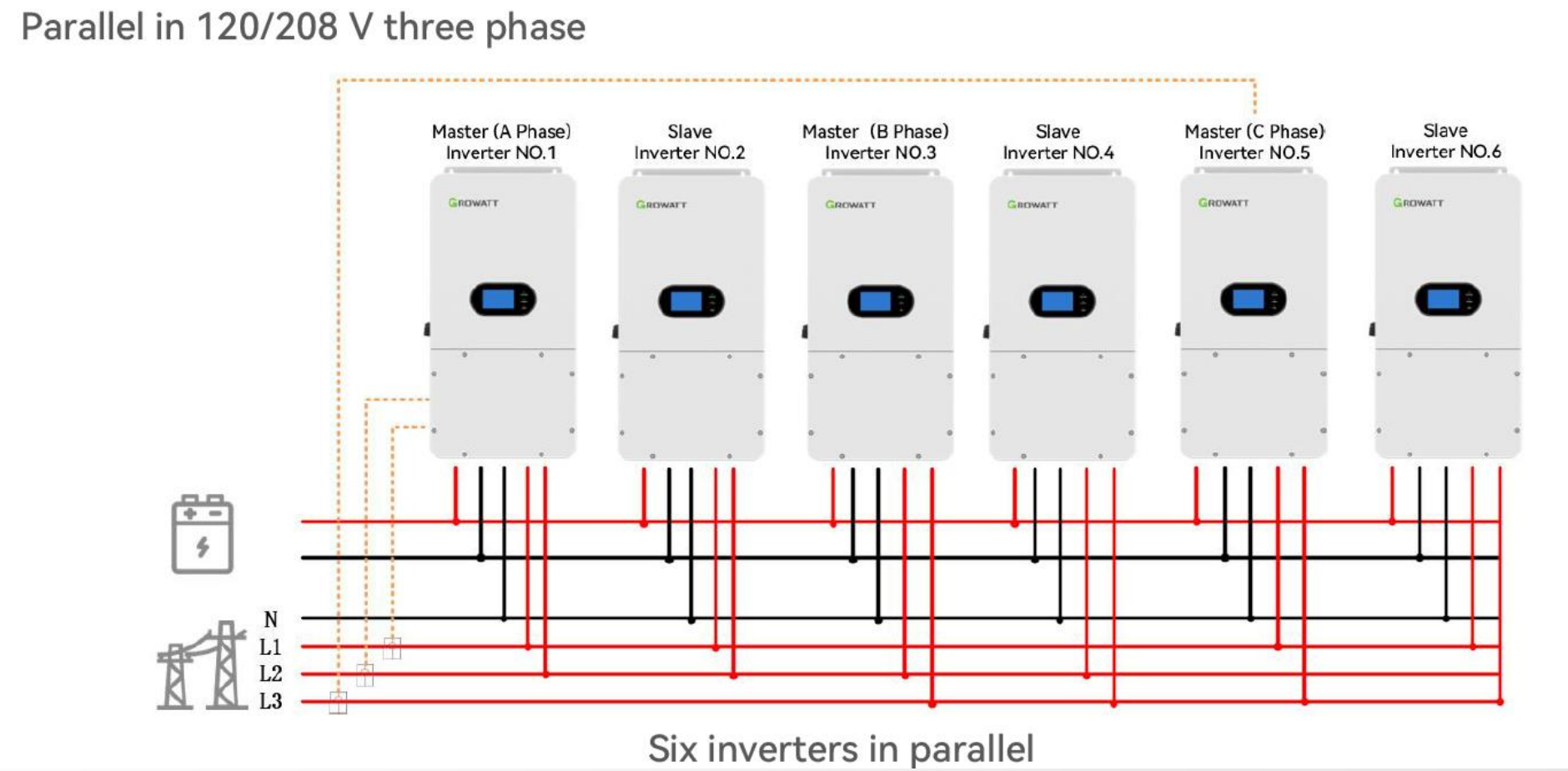


SPH DC/AC Ratio 1.5

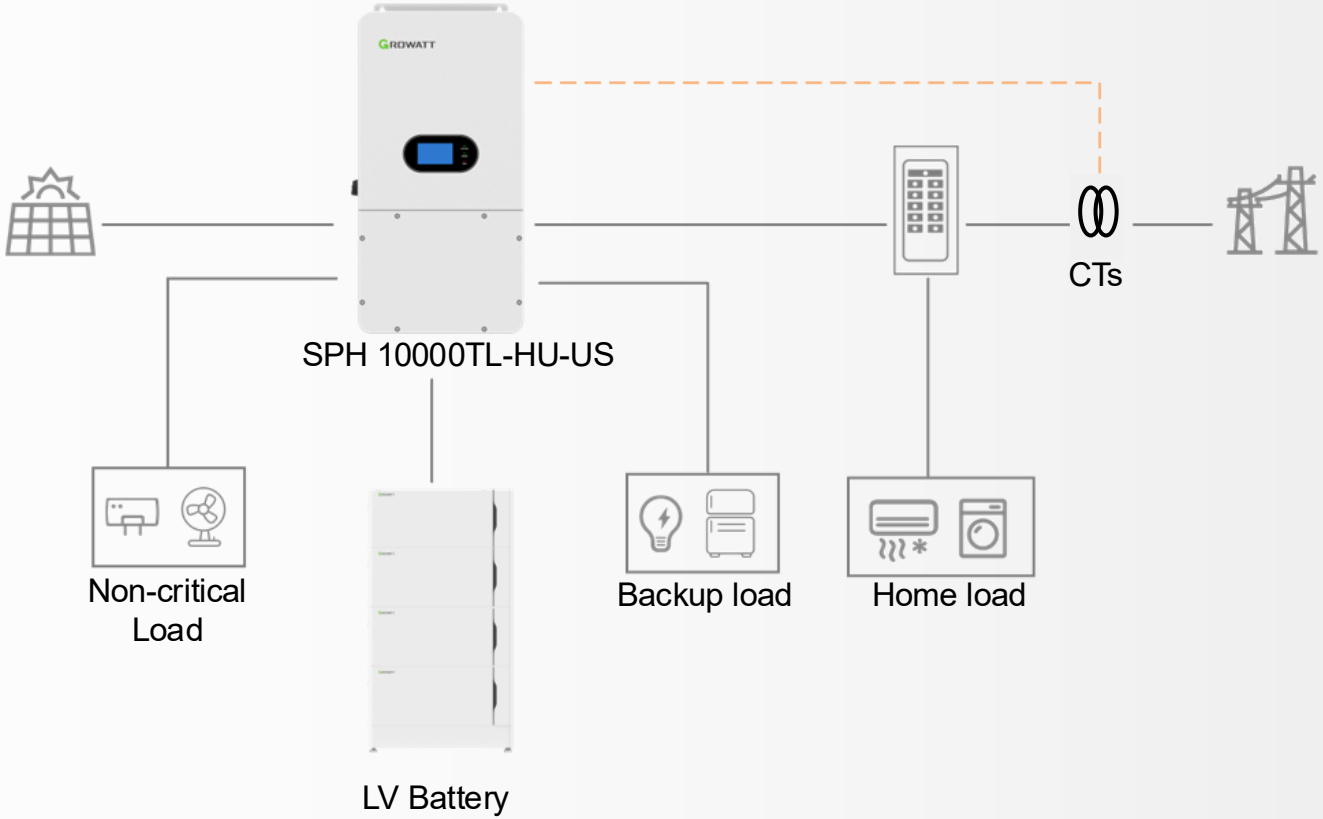


Suitable for commercial applications

SPH 10000TL-HU-US supports up to 6 connected in parallel (120/240 or 120/208) to expand the system power to 60kW



Load Shedding function

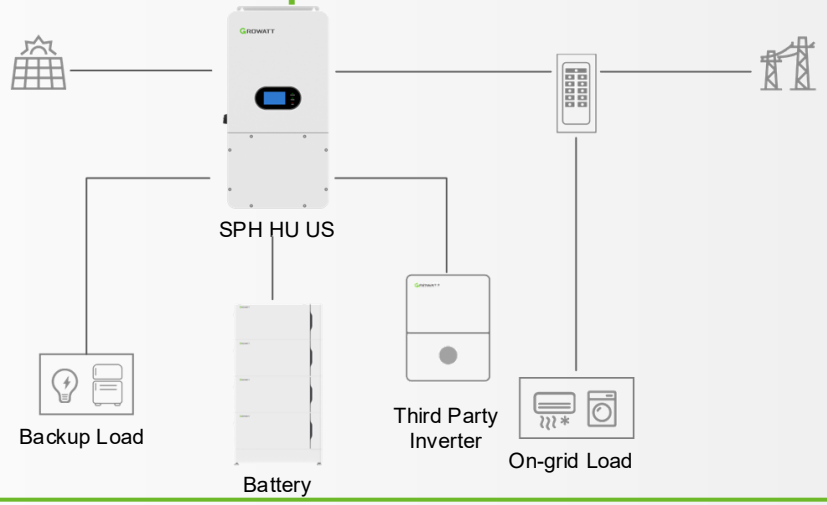


Gen Port is Used for Load Shedding/Smart Load Function

Allows users to prioritize home loads by connecting non-critical loads to the GEN port. The system powers the non-critical loads on and off based on the battery's state of charge (SOC), ensuring optimal energy management.

SPH AC-Coupled Solution

AC-Coupled on GEN Side



SPH-HU-US
AC-Coupled Solutions

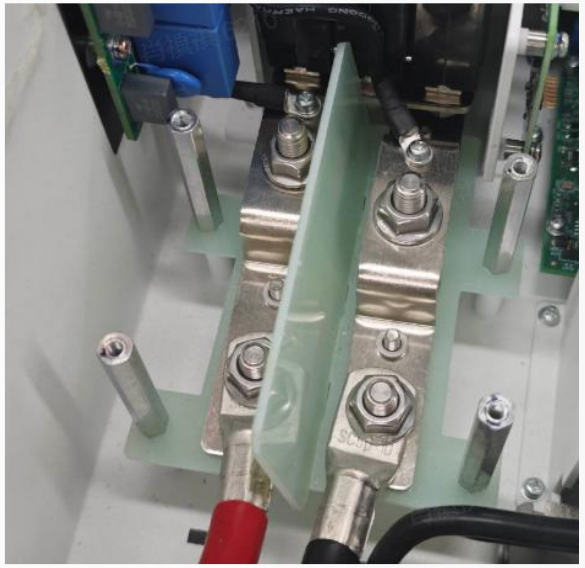
The SPH HU US allows easy integration of batteries into existing PV only systems and is perfect for AC retrofitting.

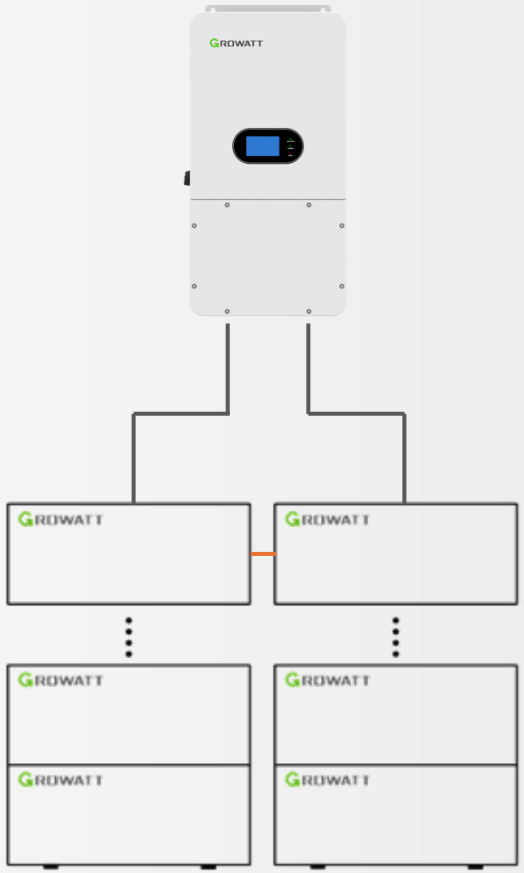
Compatible Battery

Battery Flexibility

In addition to Growatt-branded batteries, the SPH HU US is also compatible with various third-party batteries. Updated list include battery models is available at: https://us.growatt.com/upload/file/Growatt_Approved_LV_Battery_List.pdf

Dual Battery Input Port

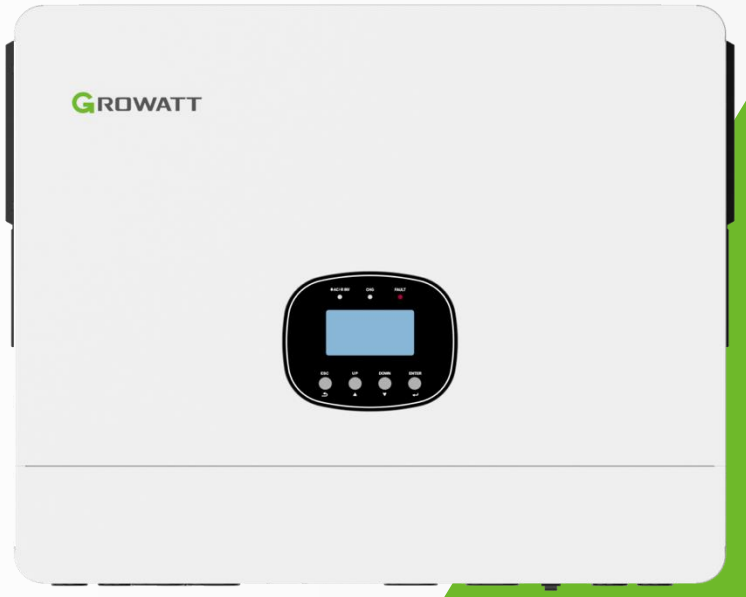




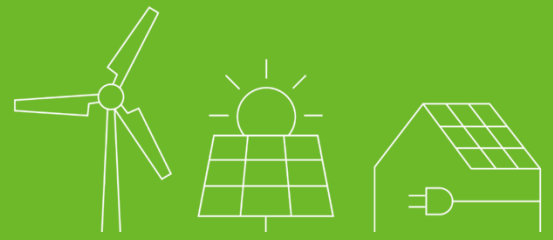
Dual Battery Input Port for Two Cluster of Battery in Parallel

With the dual battery input port, clients can easily expand battery capacity or increase output power. This eliminates the need for an additional battery combiner box, simplifying the installation process and reducing costs

Note: Only new version (B) has dual battery input port.



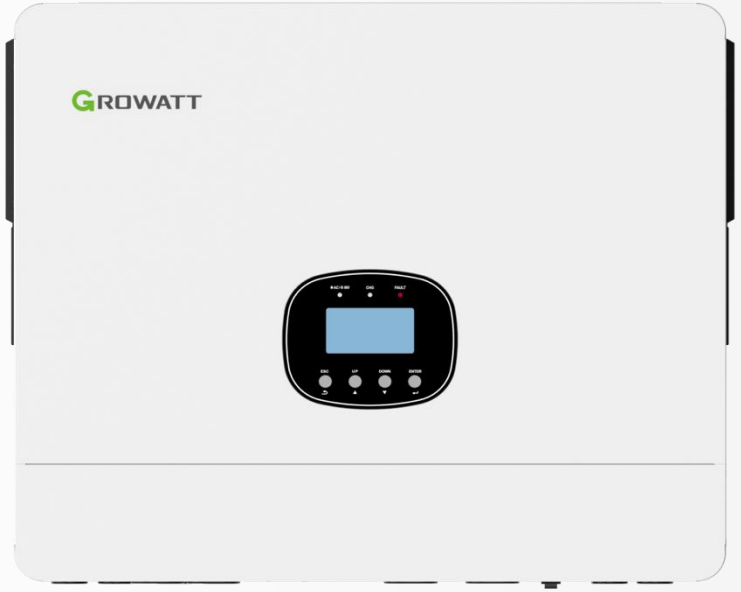
SPE 8000-12000



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Product Overview-SPE 8000-12000TL-HU-US



SPE 8000-12000 US

General

- Off-grid inverter
- Output Power:12000W
- Built in transfer switch
- Two AC input terminals with integrated transfer switch
- 15,000W PV input voltage - 550VDC, 54A, (27/27)
- Dual MPPT trackers

Protection

- IP20 indoor rating
- 5-year product warranty

Leading Features

- Cost effective & Upgrade from the popular SPF models
- Parallel 9 inverters
- Up to 320+kWh of LV batteries per inverter
- Three phase & commercial applications
- Supports Direct Generator Input
- Interface with low voltage batteries

Compatible Battery

Battery Module
ALP 5.0L-E2-US

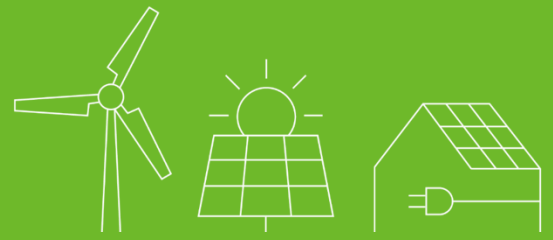
ALP Low Voltage Battery System

- UL9540 certification
- (IP66,NEMA 4X)
- 5.0kWh / Module
- Flexible capacity : 5.0kWh ~ 320kWh
- Excellent safety of cobalt free LiFePO4 battery
- Up to 220A per string, no need for combiner box
- Option for wall mount brackets
- Operating temp. range: -10C to 50C

Key Advantages

Model / Parameters	SPF 3000-5000 ES	SPE 3500-6000TL HVM-G2	SPE 12000US	Benefits
Maximum PV array open circuit voltage	450V	**500V**	**550V**	Each string can be connected to more modules,PV input power up to 18000W
No. of MPP trackers	1	**2**	**2**	PV module strings can be installed at different orientations
Max. PV input current	22A	**32A(16/16)**	**54A(27/27)**	More PV strings can be connected to increase input capacity, compatible with 500+ PV module
AC input source	Utility power or generator	**Utility power and generator**	**Utility power and generator**	No need for the extra ATS device to connect between inverter and the AC source
Air flow	Without filter	Without filter	**Dust-proof design**	Prevent inverter faults caused by the excessive dust and easy for maitenance
Parallel capacity	6	**9**	**9**	The system output power is increased to meet the needs of customers with larger loads.
Generator control	NO	**Yes**	**Yes**	Customers can control the working time and current of the DG according to the actual needs to save the fuel costs.
BLVD function	NO	**Smart load (3.5-4.5K) Yes (6K)**	**Yes**	Customers can adjust the working hours of non-essential loads according to actual needs

7-12K AC EV Charger



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Product Overview-AC EV Charger

THOR 07/09/12AS-P US

THOR EV Charger US

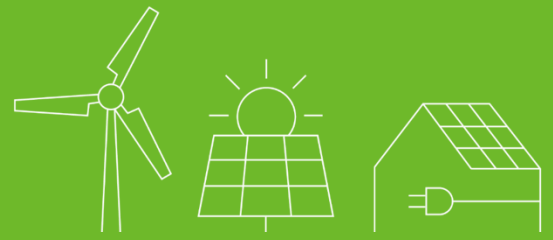
THOR 07/09/12AS-P US

240V 7-12kW Level 2 Residential Fast Charger
Single J1772(Type 1) output plug

IP65 NEMA 4X outdoor rated -22°F~122°F

Charging time 4-7 hours

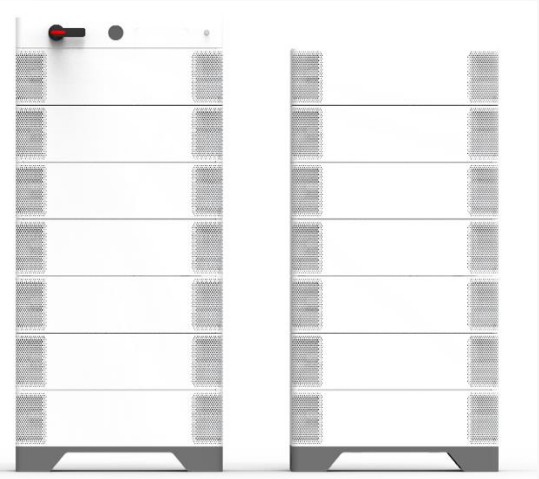
Commercial WIT 28-55K & 50-100K



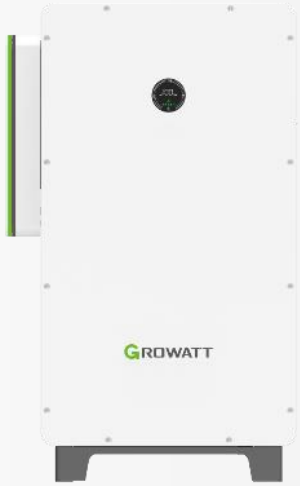
SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

WIT+APX System



APX 86-200H-S1-US



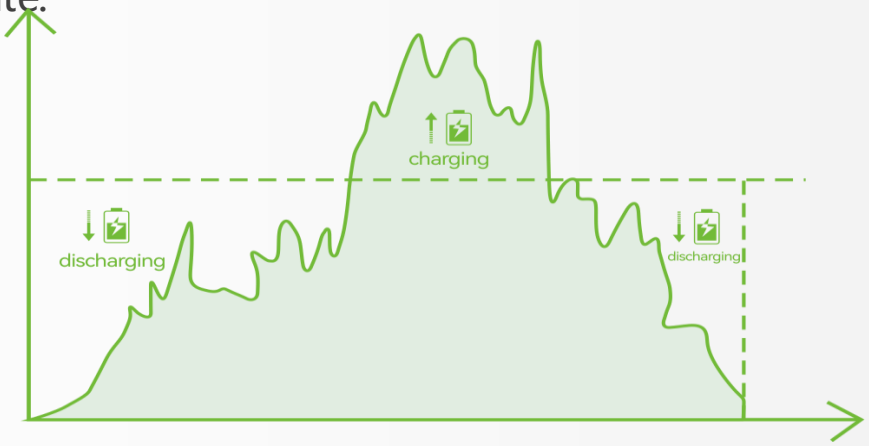
WIT 28-55K-US L2
WIT 50-100K-US

- **Nominal Output Power:**
  - 28-55kW (208Vac)
  - 50-100kW (480Vac)
- **Nominal AC Frequency:** 60Hz
- **Battery Energy:** 86-200kWh
- **PV Energy:** 2x Output Power – Up to 10 MPPTs, 2 Strings/MPPT
- **AC Grid Connection Type:** 3P3W+PE / 3P4W+PE
- **Ingress Protection:** IP66
- **Working Modes**: On-grid & Off-Grid
- **On/Off Switching Time:** <20ms(HU/AU Model)
- **Installation Method**
  - Floor (Inverter)
  - Stacked (battery)
- **Parallel System :**
  - 6 sets (On-Grid mode)
  - 3 sets(Off-Grid mode)
- **Warranty:** 10-year standard (Inv. 15/20 yr. options)

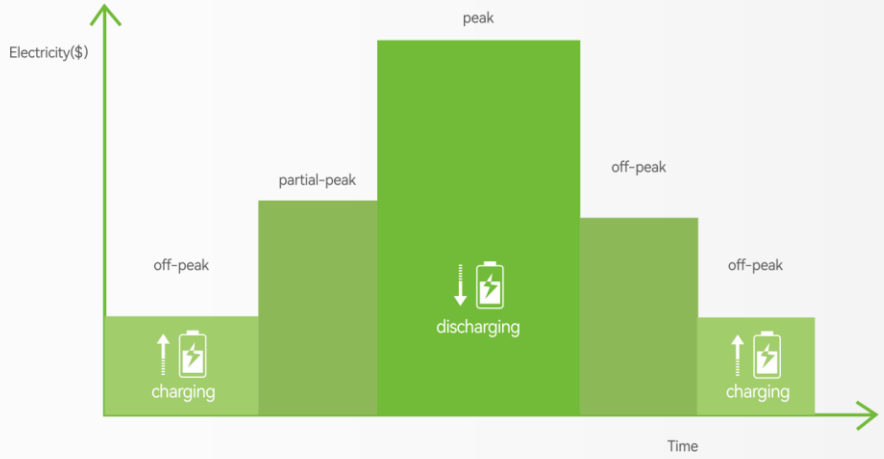
- **Certifications**
  - UL1741 (SA/SB)
  - UL9540A
  - UL9540
  - CSA C22.2 107.1
  - CSA 22.3 No 9 (In progress)

Energy Storage System Application

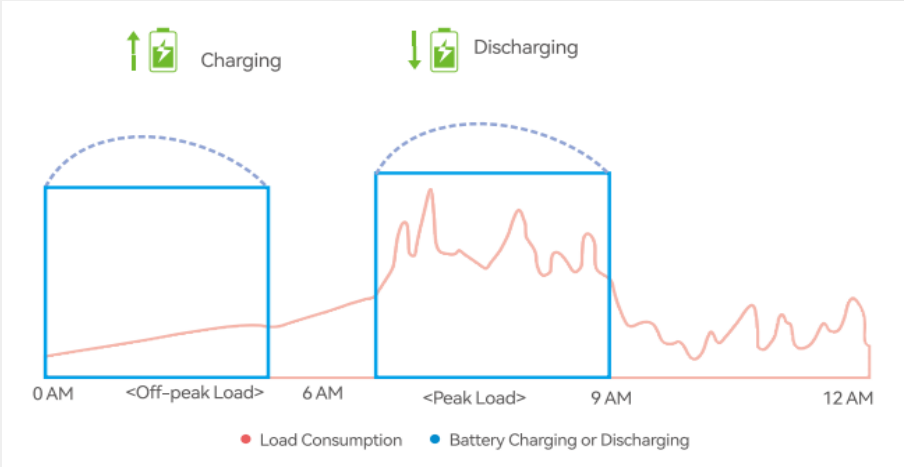
- **Self-Consumption:** Storing the surplus solar power into the battery during the day and using it at night, which maximizes the solar energy self-consumption rate.



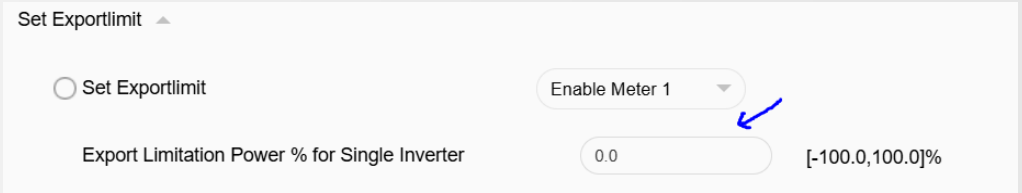
- **Time of Use:** Charge the battery at off-peak tariff and use it at peak tariff to reduce the electricity bill.



- **Peak Shaving:** Discharging at peak load and charge the battery at off-peak load.

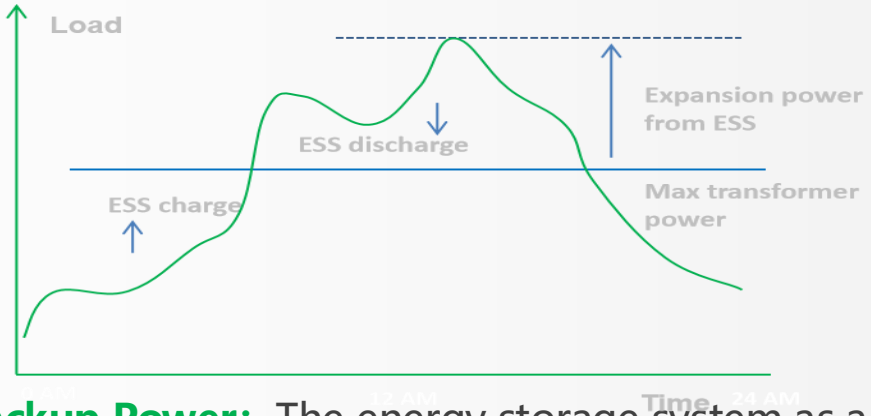


- **Zero Export:** Manage export/import limitations via password protected online portal.

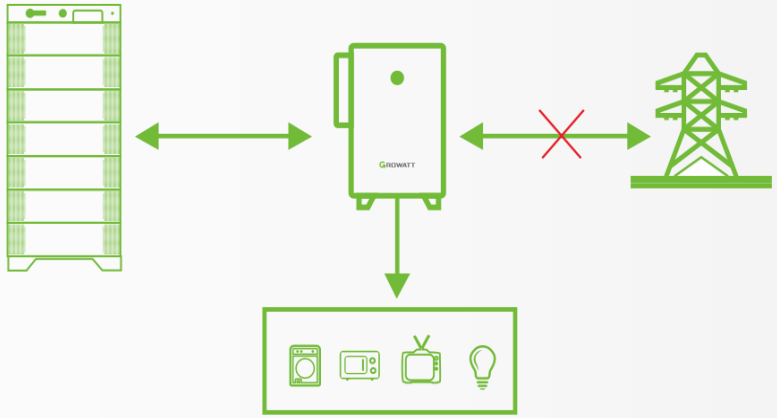


Energy Storage System Application

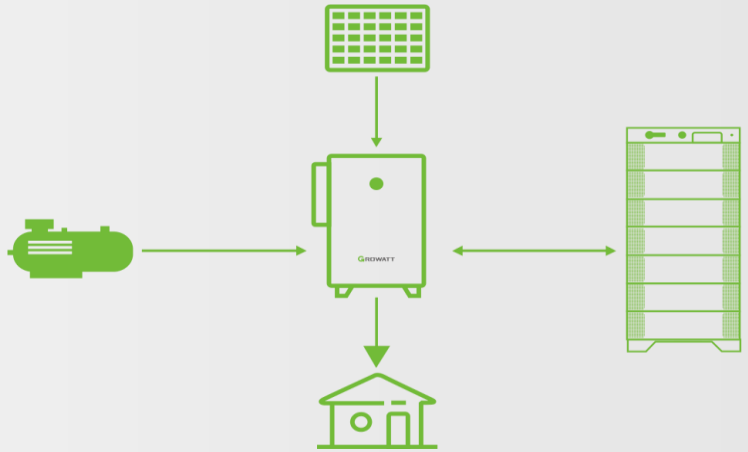
- **Power Expansion:** The battery will discharge to compensate for the additional load consumption when the load power exceeds the transformer capacity.



- **Backup Power:** The energy storage system as a backup power will supply power to the load when the power grid fails.



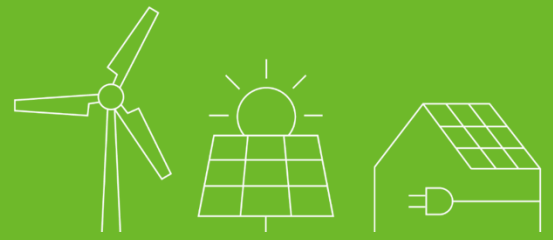
- **Micro-grid:** Work with multiple energy source to guarantee 24/7 power supply where there is no grid.



- **Power Quality:** A battery inverter with a power quality function balances fluctuations in the mains voltage, thus ensuring that facilities have consistently high mains quality and therefore operate safely.

MIN Inverter

Installation & Commissioning

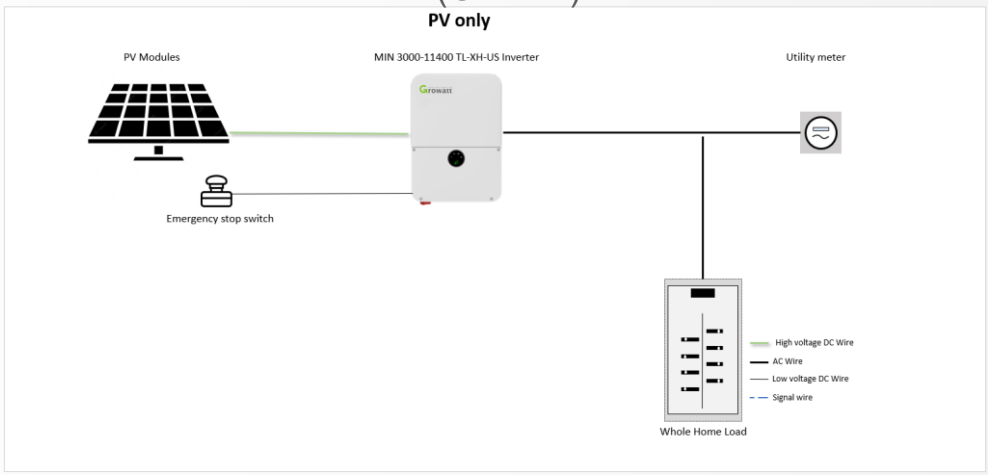


SHENZHEN GROWATT NEW ENERGY CO.,LTD

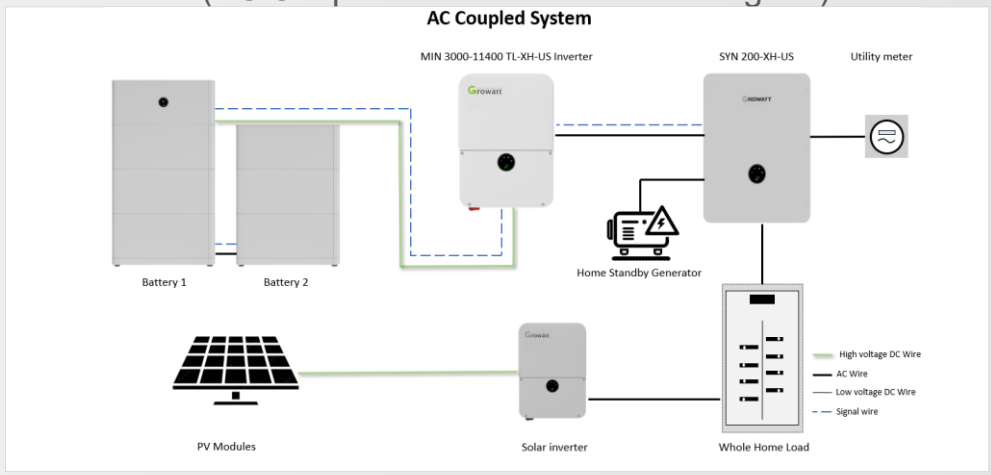
GROWATT

System Solution

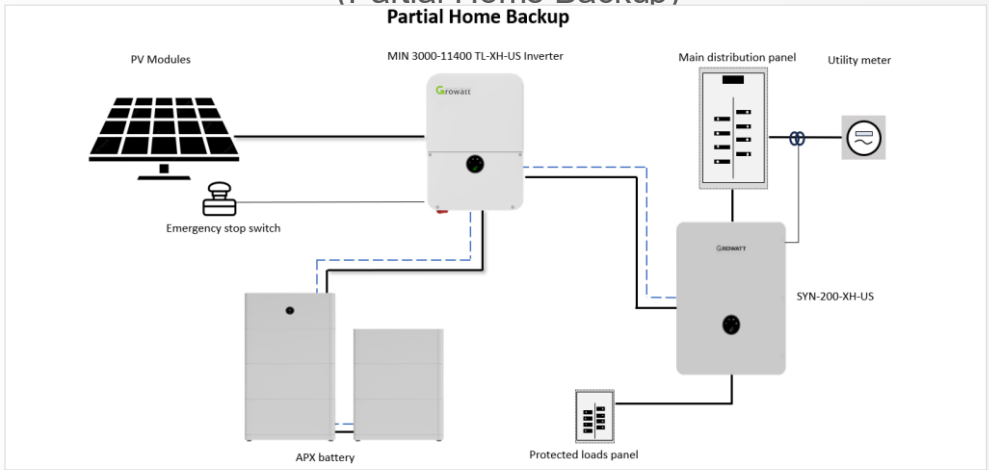
MIN TL-XH
(Grid-Tie)



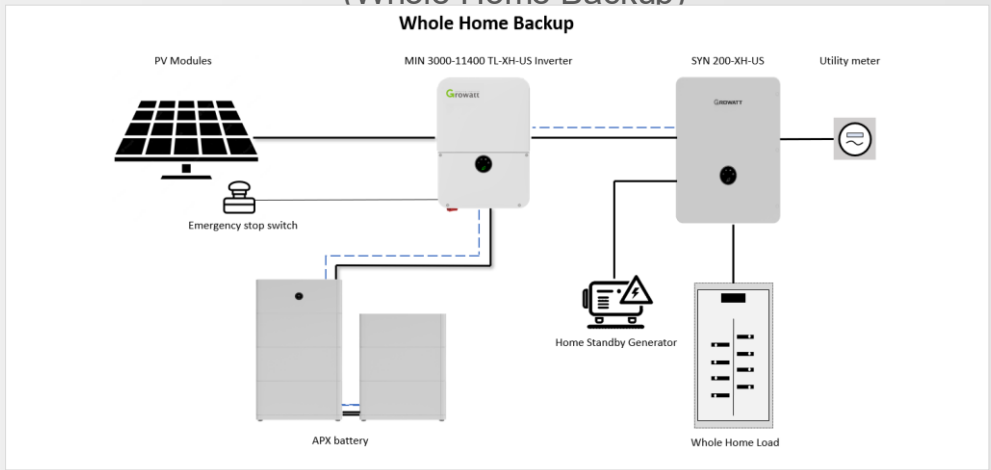
MIN TL-XH + APX
(AC Couple : With or Without existing PV)



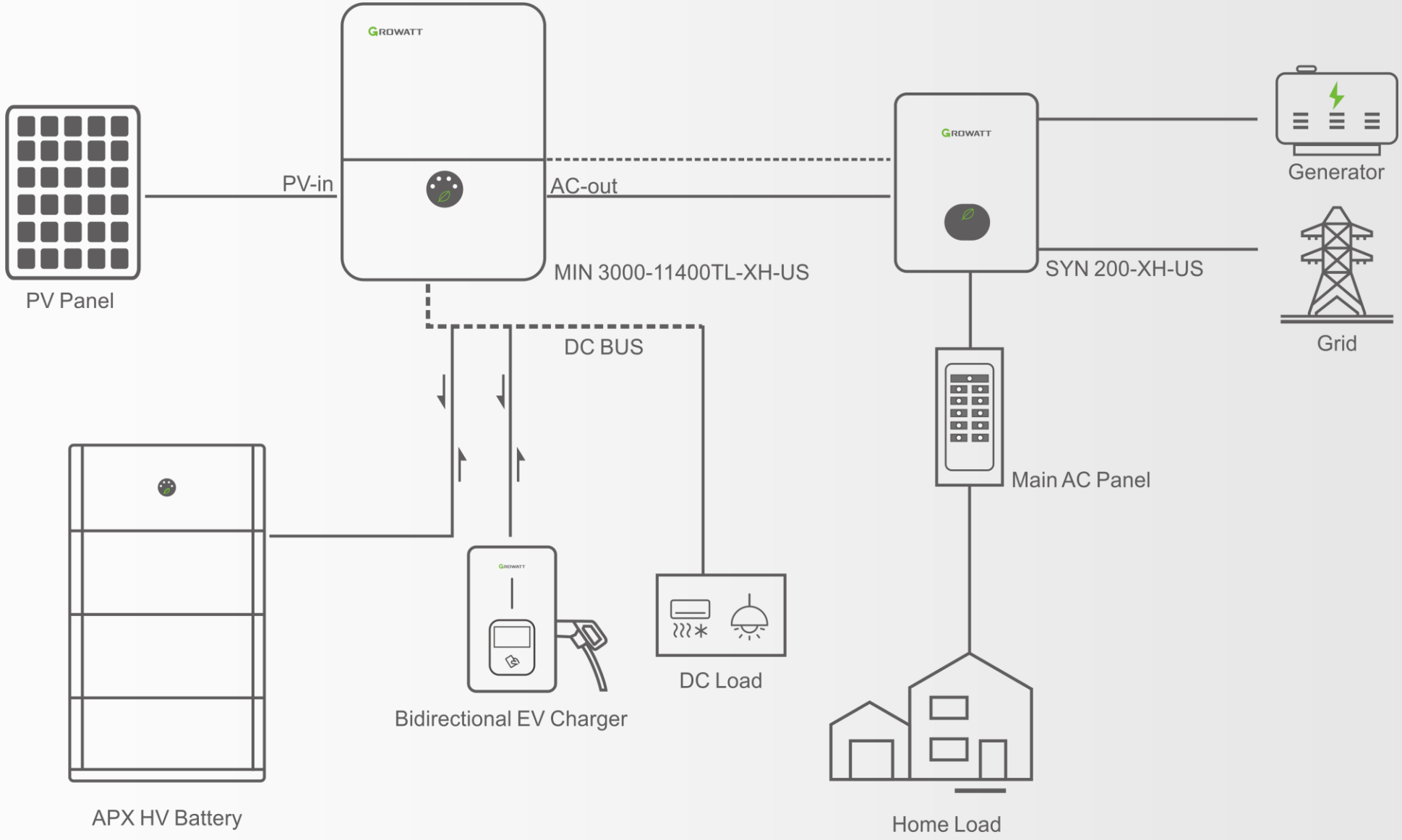
MIN TL-XH + APX + SYN
(Partial Home Backup)



MIN TL-XH + ARO + SYN
(Whole Home Backup)



Battery Ready PV System for Your Home

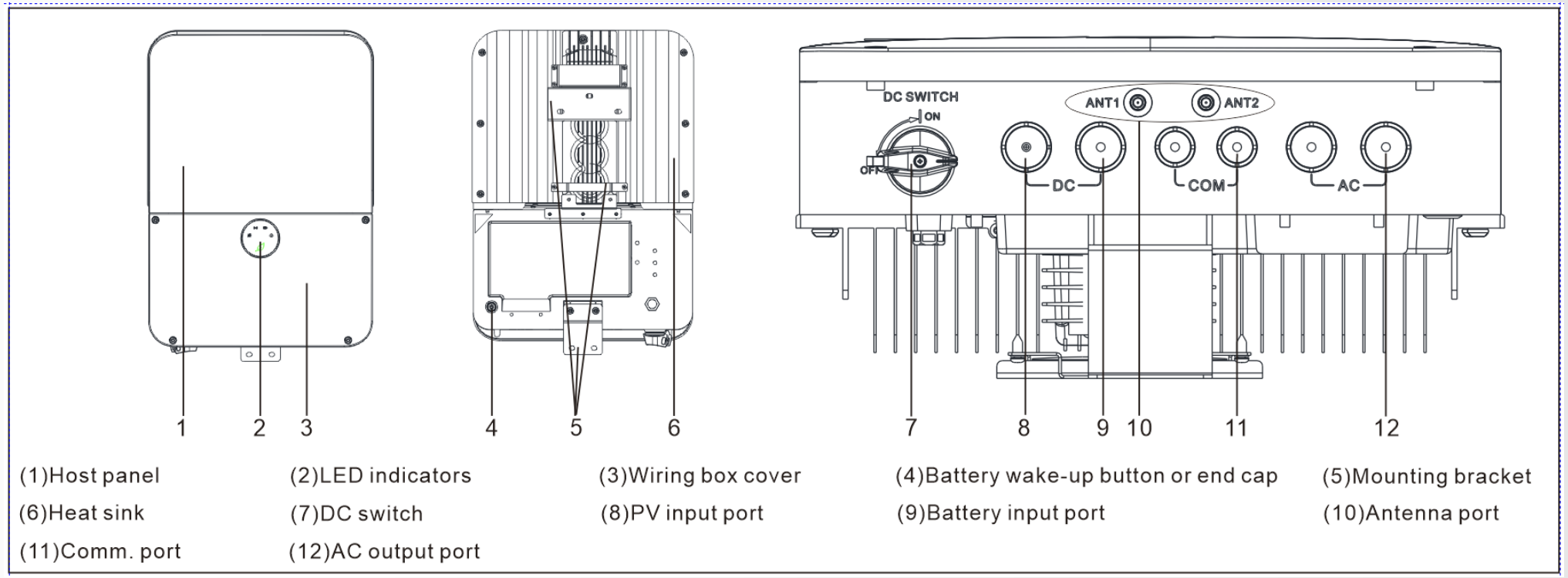


MIN TL-XH-US Inverter Installation

Full Installation Video available on Growatt New Energy YouTube Channel using link below or by searching Growatt USA Inverter and Battery Installation Training Guide

https://www.youtube.com/watch?v=wNZwxywdzN8&ab_channel=GrowattNewEnergy

MIN TL-XH-US General information-specification



(1)Host panel (2)LED indicators (3)Wiring box cover (4)Battery wake-up button or end cap (5)Mounting bracket
(6)Heat sink (7)DC switch (8)PV input port (9)Battery input port (10)Antenna port
(11)Comm. port (12)AC output port

Note:

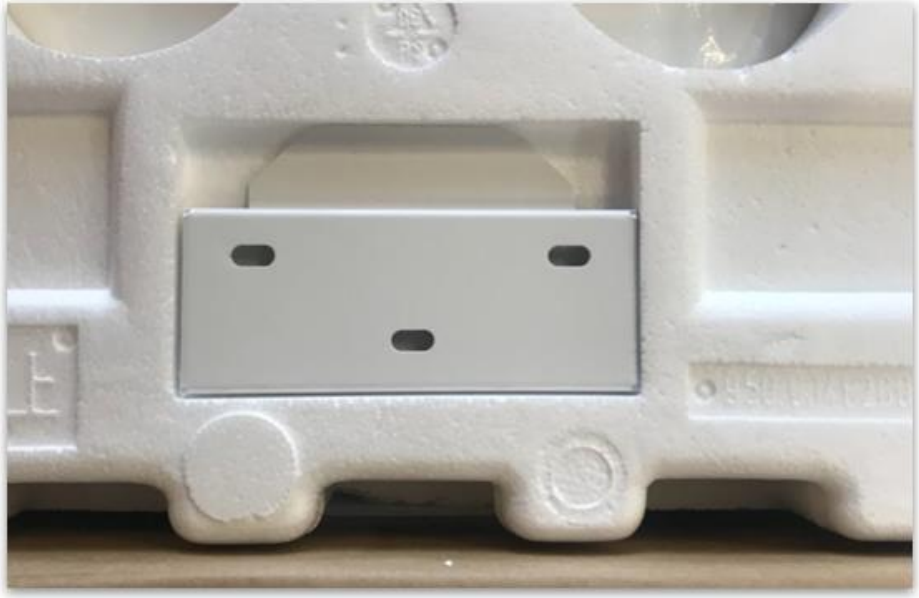
a. Before installing the device, check that the package contents are intact and complete against the packing list. If any damage is found or any component is missing, contact your dealer.
b. This file will be updated from time to time due to product upgrades or other reasons. Unless otherwise agreed, this document is intended as a guide only. All information and suggestions do not constitute an express or implied warranty. The final interpretation of the content is at GROWATT.
c. This document is for quick guidance installation only. For details, please refer to the User Manual.
d. Machine damage caused by failure to follow the installation instructions are not covered by the warranty.

MIN TL-XH-US Inverter Installation

Material Preparation

Tools:	• 5 MM allen key • Appropriate electrical tools • 3/4” step bit • Drill, impact, bandsaw • Level • Voltage tester

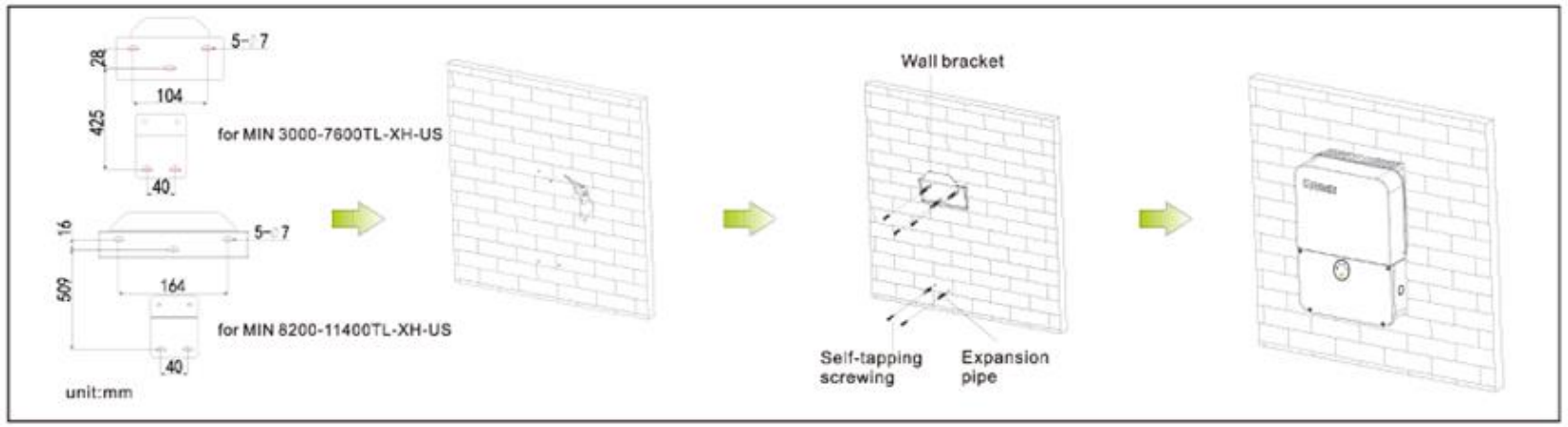
- Remove inverter mounting bracket and accessory pouch from box.

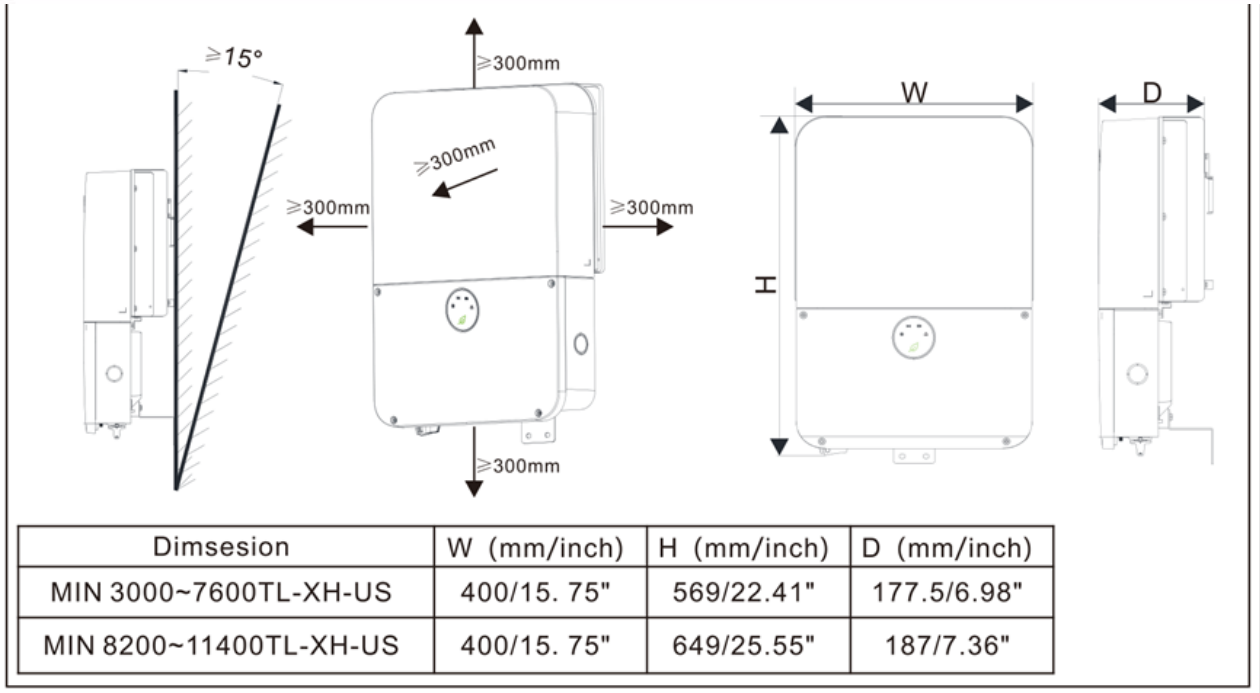


MIN TL-XH-US Inverter Installation

MIN TL-XH-US Installation requirements

- Ensure there is proper wall space to accommodate required clearances (12” on all sides of the inverter).
- Level the bracket and attach to a stud if possible, using center screw holes and appropriate anchors.
- Depending on the size of the inverter, plan for 25-35 lbs of weight to be supported.
- Mount inverter by aligning bracket tab with inverter brace and lower into place.

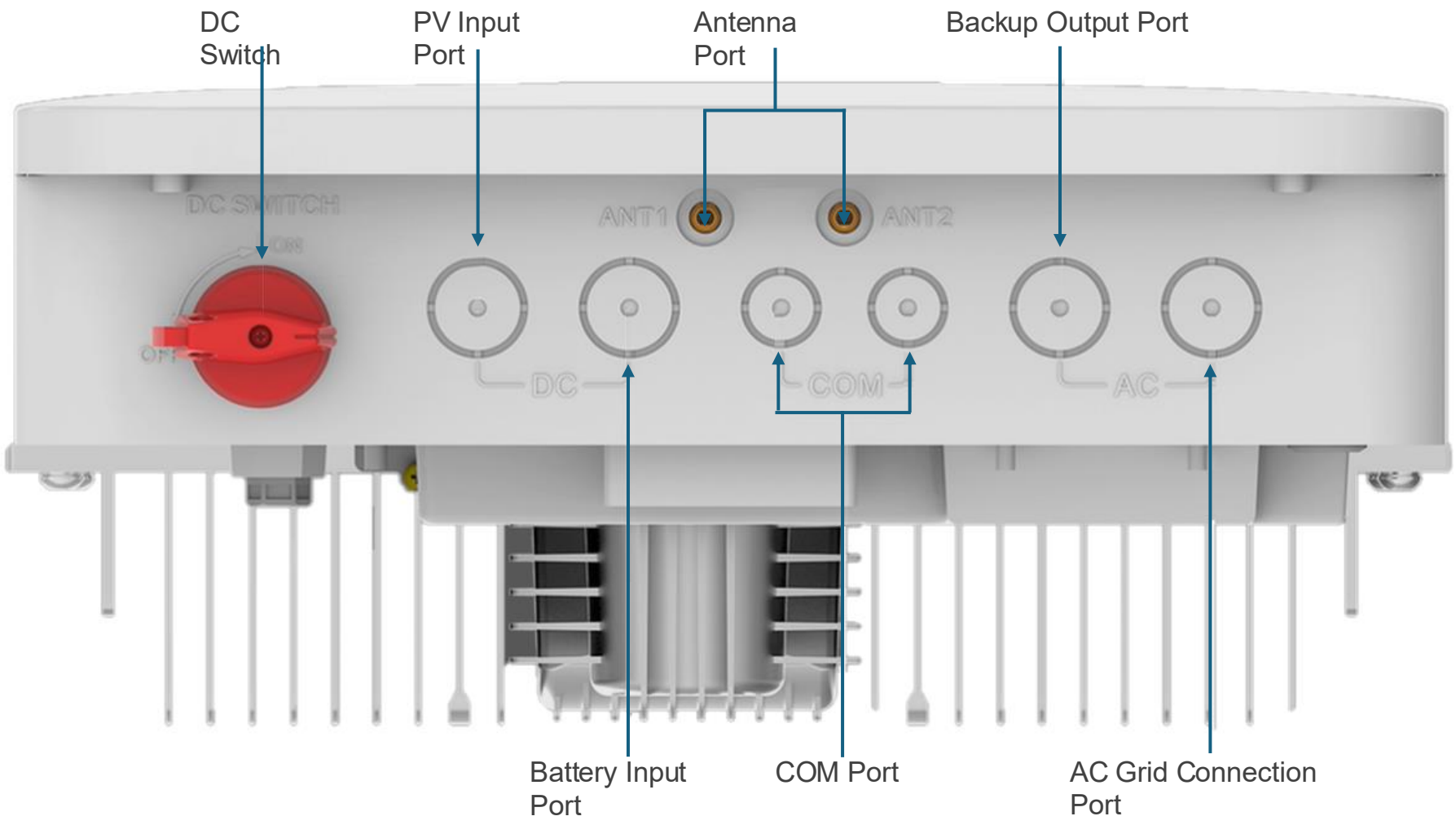




Dimsesion	W (mm/inch)	H (mm/inch)	D (mm/inch)
MIN 3000~7600TL-XH-US	400/15. 75"	569/22.41"	177.5/6.98"
MIN 8200~11400TL-XH-US	400/15. 75"	649/25.55"	187/7.36"

MIN TL-XH-US Inverter Installation

MIN TL-XH-US Connection Ports



MIN TL-XH-US Inverter Installation

MIN TL-XH-US Connection Ports

COMPLETE CONDUIT RUNS

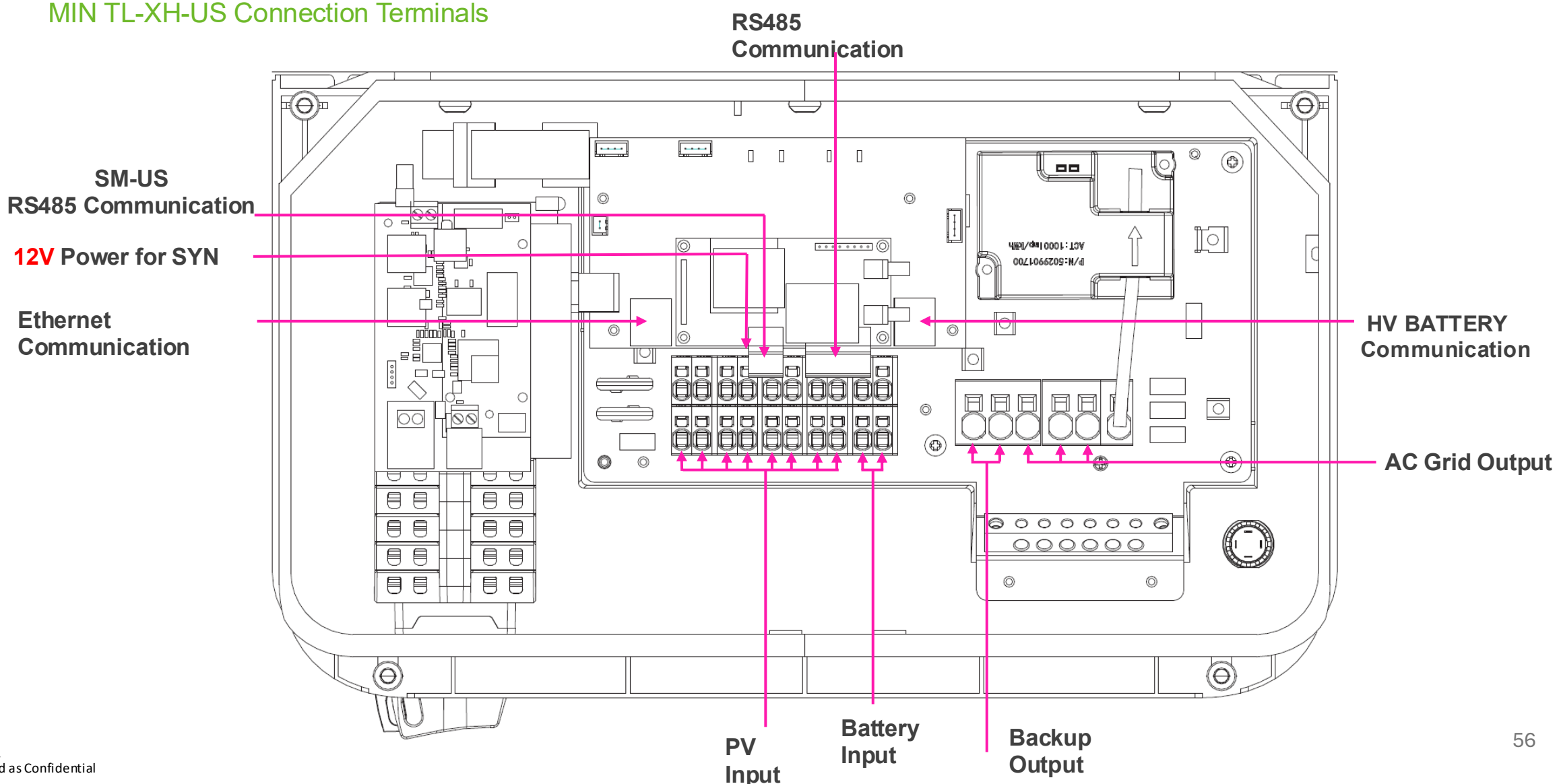
- Pre-stamped conduit entrances DC/COMM/AC, use a step bit to avoid cracking plastic shell.
- K/Os are 3/4”, Comms are 1/2” (unused)
- AC + DC K/Os can be enlarged up to 1”

NOTE: The left side is NOT allowed due to RSD transmitter placement.

- ❖ TIP: For DC conduit, install a “T” fitting with a drain connector at the low point to prevent water intrusion.

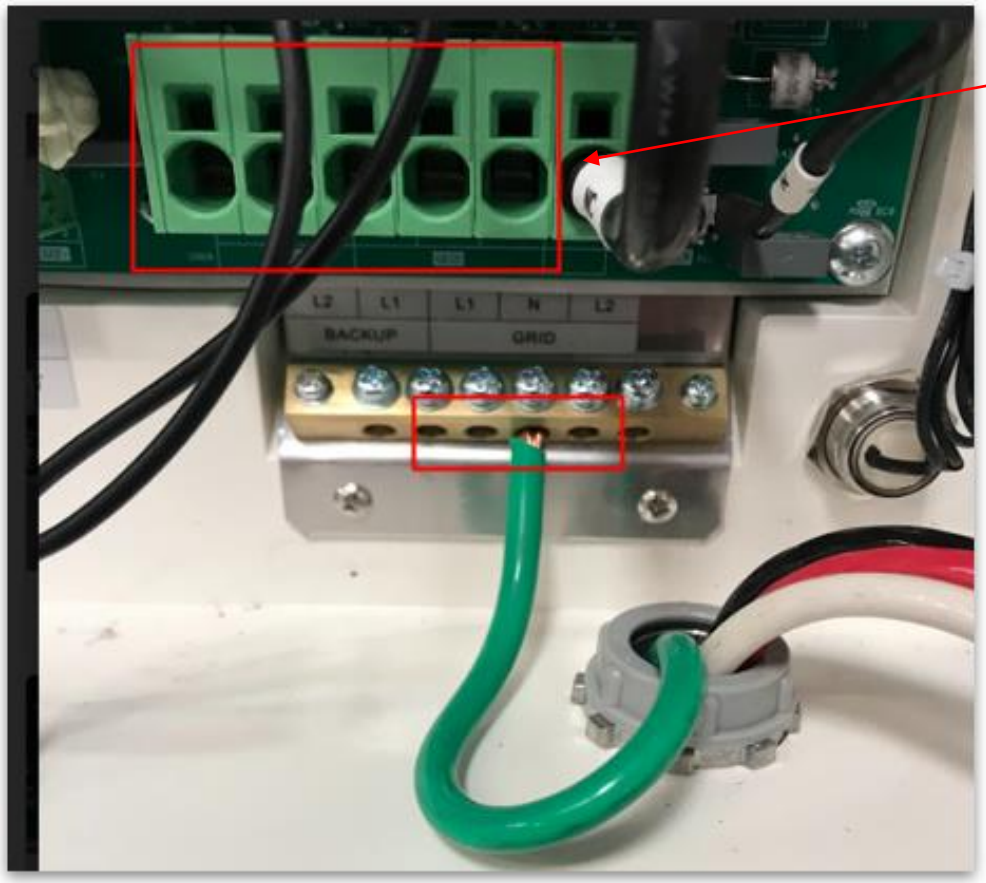
MIN TL-XH-US Inverter Installation

MIN TL-XH-US Connection Terminals



MIN TL-XH-US Inverter Installation

GRID (AC) Connection Terminals



Inverter AC conductor terminals above and ground bar below

L1 N L2

AC conductors to inverter

Connection Steps:

1.Strip 0.7 inches (18mm) of the AC cable insulation.

2.Insert the AC conduit into the AC-side drill guide that was opened.

3.Insert the 0.8*4.0 mm standard flat-blade screwdriver and press the release mechanism and open the clamp.

4.Connect the cable to the appropriate terminal blocks according to the labels on the terminal blocks (L1, N, L2, of AC Grid).

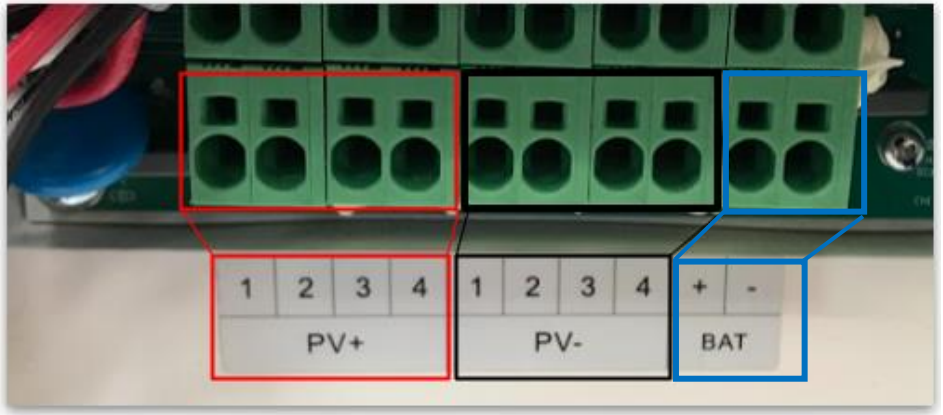
5.Insert the cable into the round opening and remove the screwdriver, then the cable is automatically clamped.

6.Connect the PE to the Grounding terminal.

NOTE: The neutral in the Growatt inverter is in the center terminal.

MIN TL-XH-US Inverter Installation

PV and BAT (Battery) Connection Terminals



Inverter PV DC terminal blocks

PV conductors

Connection Steps:

1. Turn PV Switch to OFF position
2. Connect Battery cables to BAT + / - terminals
3. Connect PV cables to the PV+ 1/2/3/4 & PV- 1/2/3/4 terminals
4. Connect the Ground cable from PV panels to the PE terminal

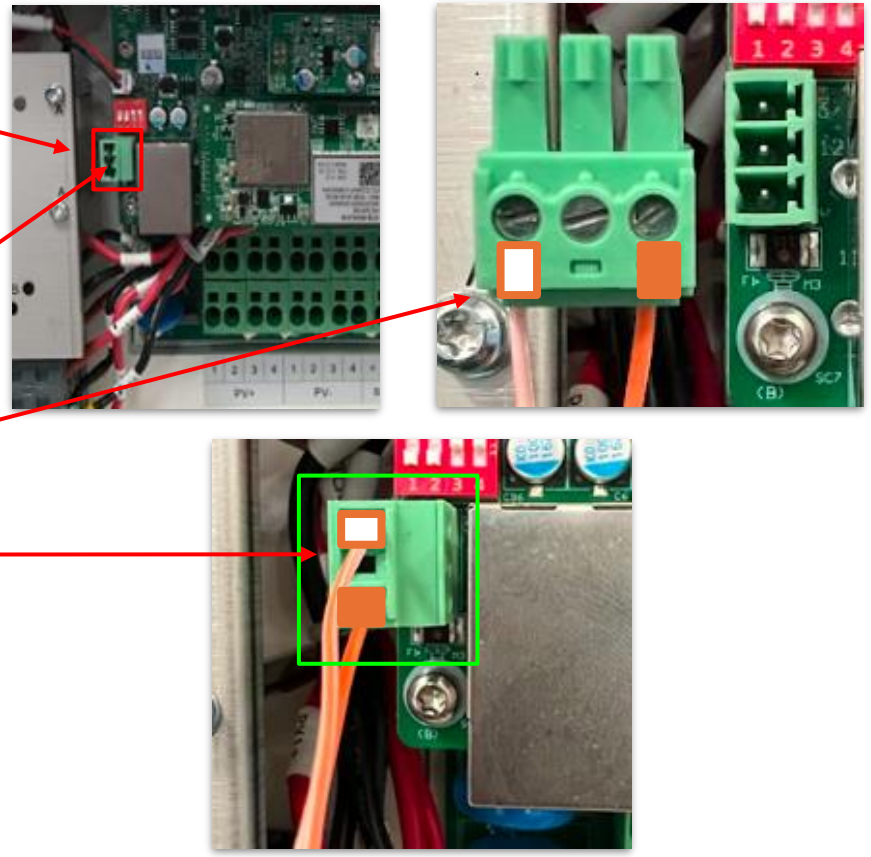
PV Configuration Limitations:

- Max. Voc voltage: 600Vdc
- Max Vmp voltage: 500 Vdc (derate from 500-550Vdc, Standby 550-600Vdc)
- Max. PV Input Current Per MPPT: 13.5A
- Max. Short Circuit Current Per MPPT: 16.9A
- Max. Recommended PV Power (STC): Up to 2x the AC rating of the inverter

MIN TL-XH-US Inverter Installation

Emergency Stop Switch (optional)

- In the inverter find the 3-port RS485 connector to the left of the pv terminal.
- Remove prewired jumper from port 1 and 3.
- Land the white/orange in the connector's left terminal and the orange in the right terminal.
- Install 3-pin connector into the terminal block.

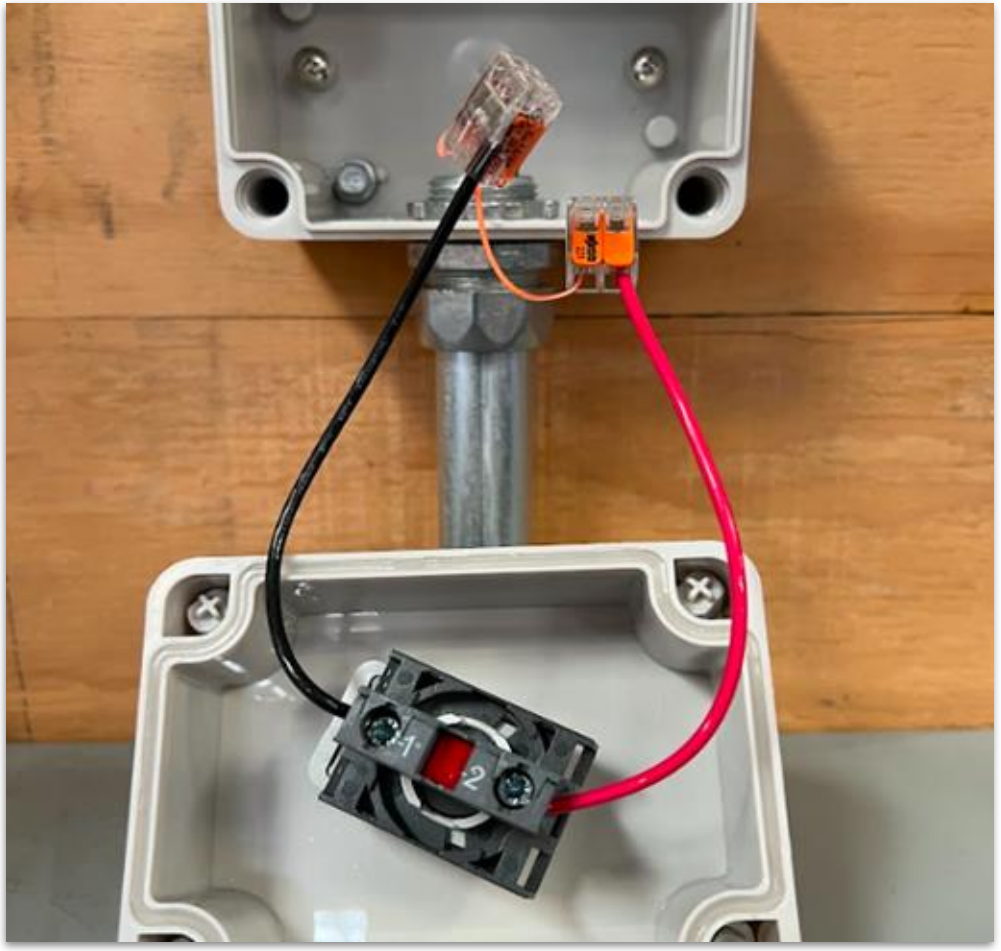


MIN TL-XH-US Inverter Installation

Emergency Stop Switch (optional)

- Land 16-12 AWG wire in the switch terminals.
- Port 1 **black**, port 2 **red**
- Connect the transmission cable to the 16-12 AWG using 12-24 AWG WAGO connectors
  - **Black** to White/Orange
  - **Red** to Orange

NOTE: E-Stop Switch application and compliance varies by jurisdiction. Check your AHJ for local requirements.

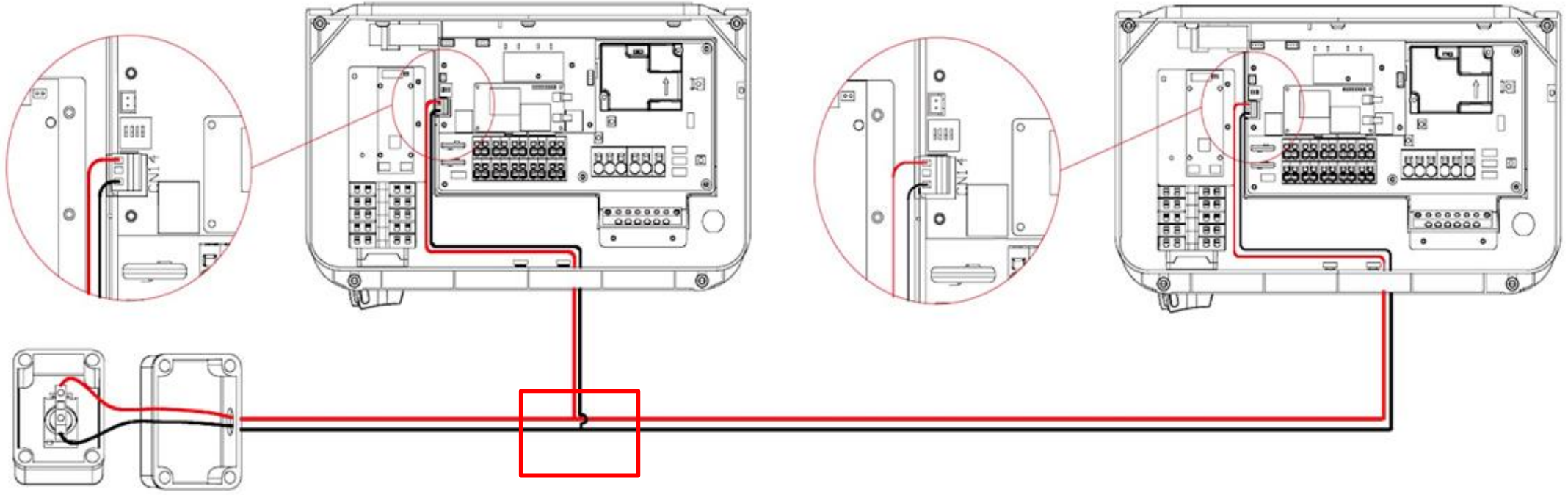


Emergency Stop Switch (optional)

CONNECT EMERGENCY STOP SWITCH (MULTIPLE INVERTERS)

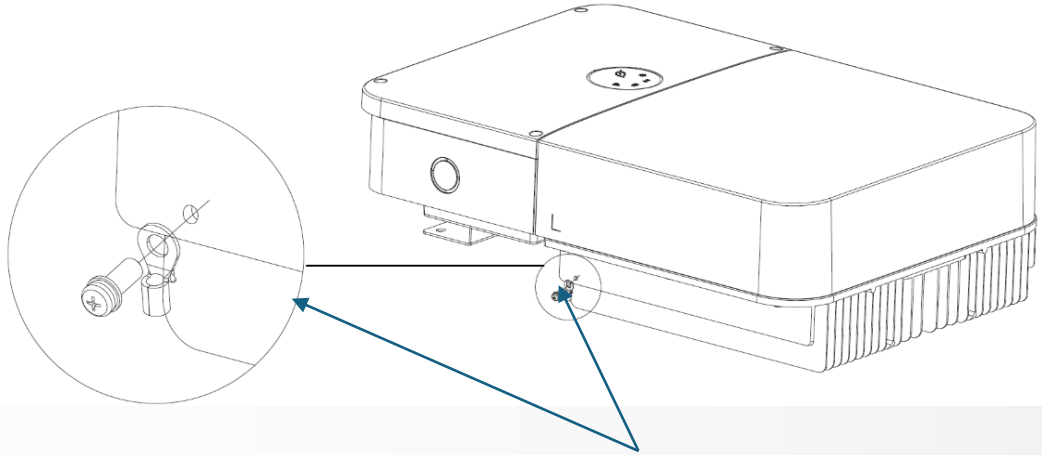
- If there are multiple inverters on site, splice the CAT5 cable wires (white/orange to white/orange and orange to orange) with 3 port 12-24 AWG WAGO connector using two of the 3 ports inside of an inverter enclosure or the Emergency Stop Switch housing.

- Connect 16-12 AWG wire using third port of the 12-24 AWG WAGO connectors and land 16-12 AWG wire in the switch terminals.
  - **Black** to White/Orange
  - **Red** to Orange



MIN TL-XH-US Inverter Installation

Grounding and Antenna Connections

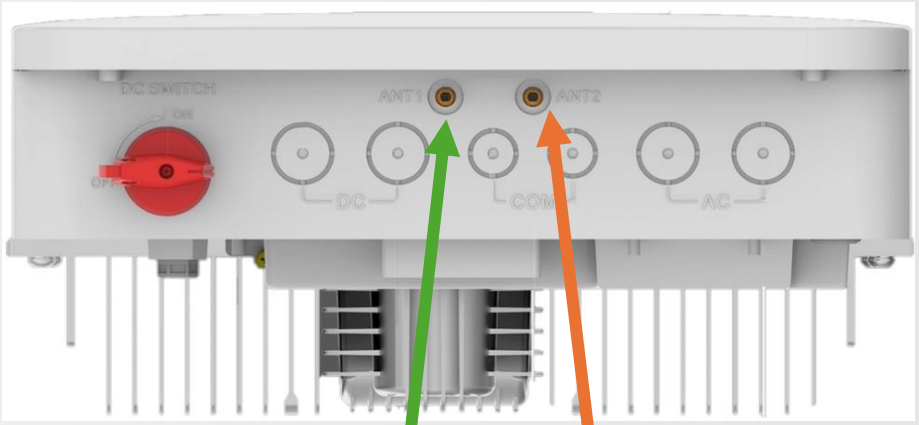


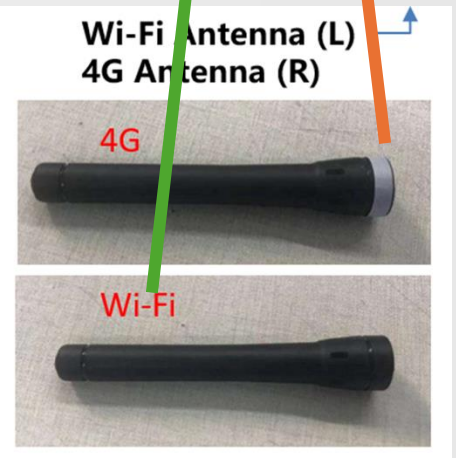
The Ground connection is located on the right-hand side of the inverter.

- Remove the antenna from the accessory bag and install to corresponding ports on the bottom side of inverter. Hand tighten only.

NOTE: 4G and WiFi have a different Male/female connection to avoid incorrect installation.

- 4G has a grey collar and should be installed on the right hand port.





Wi-Fi Antenna to **ANT1** located at **LEFT**

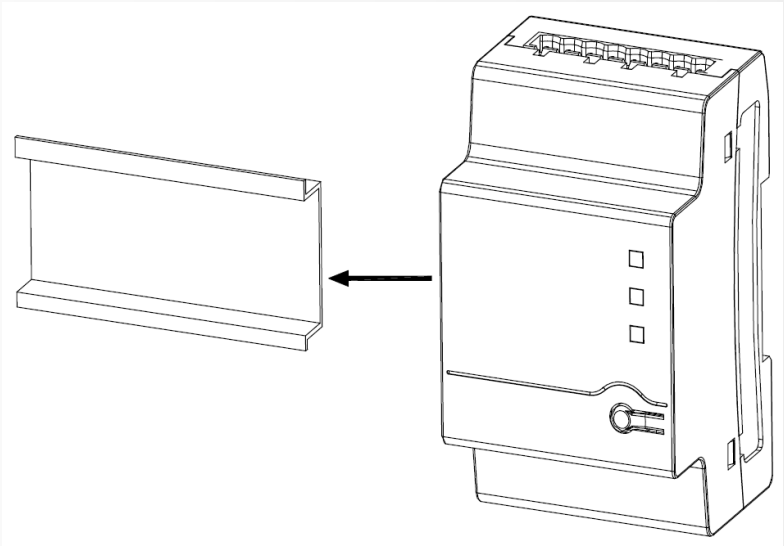
4G Antenna to **ANT2** located at **RIGHT**

SM-US Smart Meter Installation (optional)

***SYN has Smart Meter Pre-installed**

SM-US Smart Meter Installation

SM-US & CT Installation



Connection Steps:

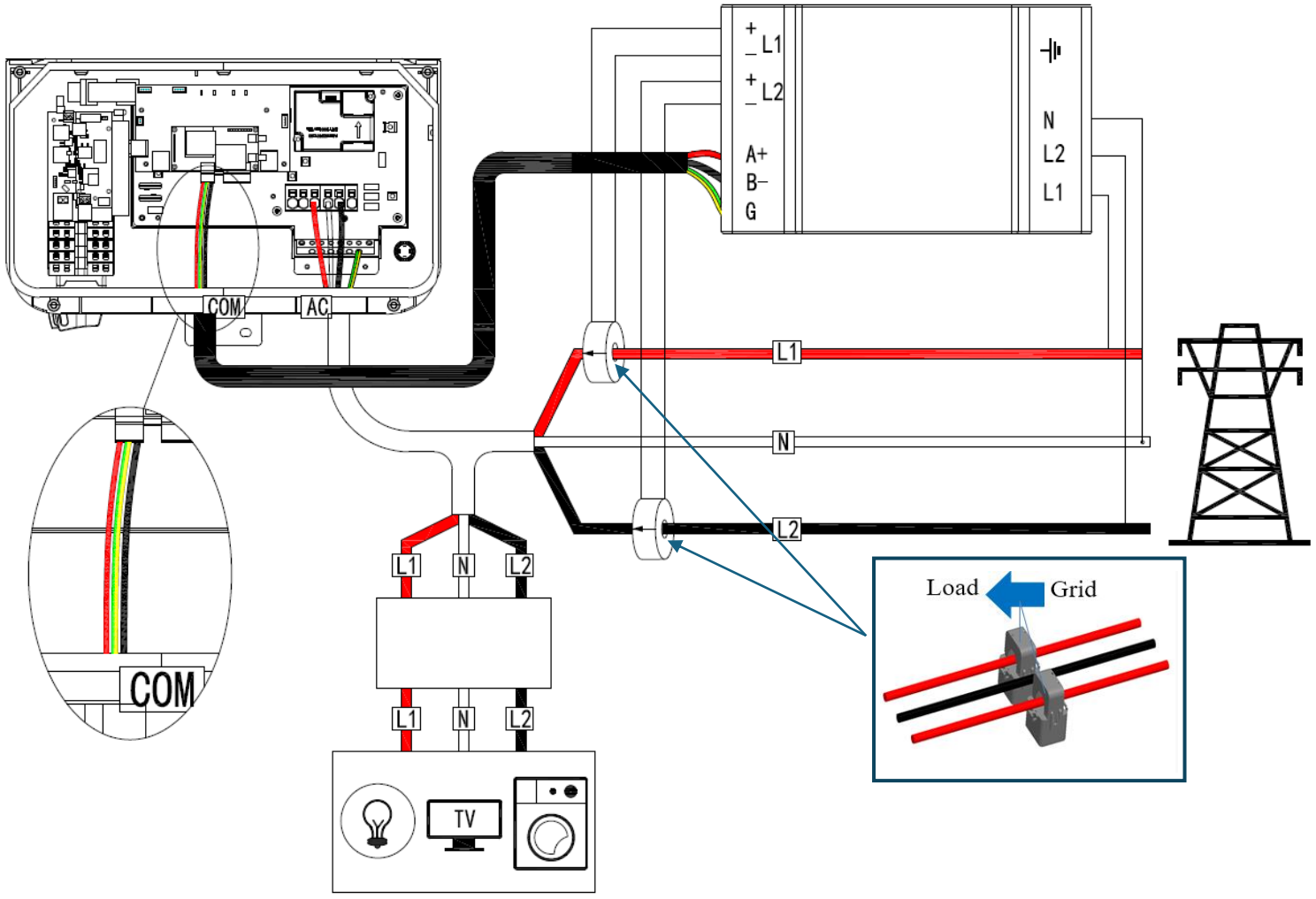
1. The SM-US & CT's should be installed inside of the main distribution panel. The meter should be mounted in the panel using 35mm DIN Rail

2. Install CT's on the AC cables between the Load and Grid

3. Open the CT'S to check direction arrow labeled which indicates the current direction and the direction of the arrow means the direction from **GRID to LOAD**

SM-US Smart Meter Installation

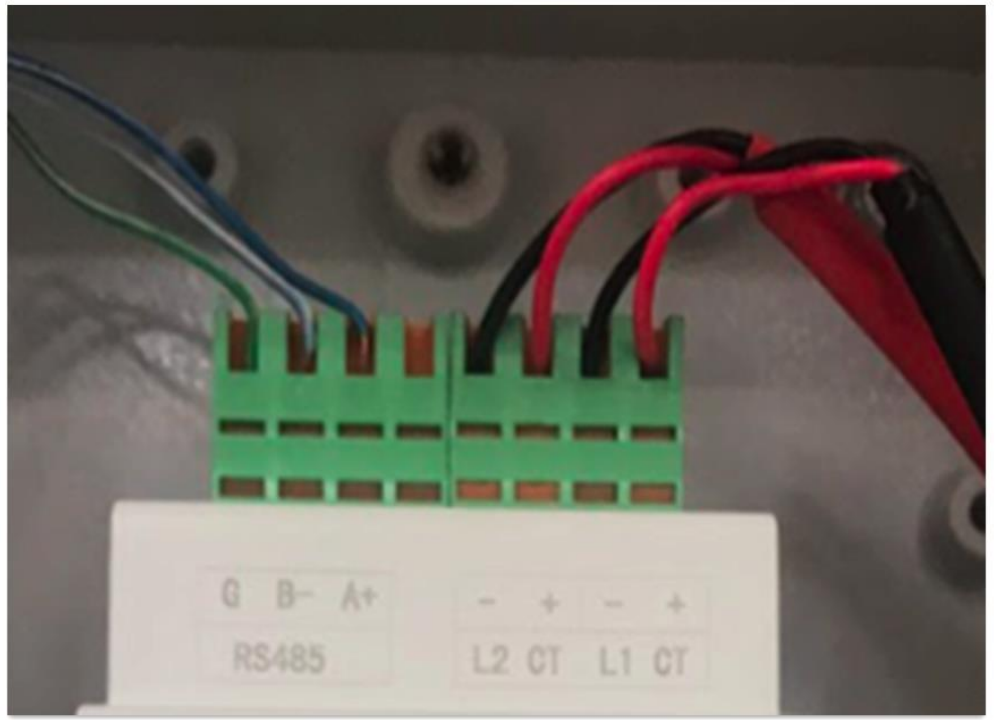
SM-US & CT's Wiring



NOTE: Meter AC L1 should read 0v AC to Grid L1 where L1 CT is placed. 240v AC means CT will show out of phase/reverse reading.

SM-US Smart Meter Installation

SM-US RS485 Wiring Configuration

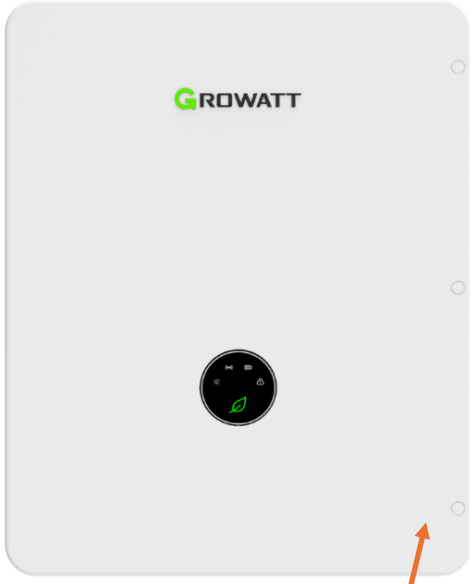


SM-US Terminal	X	A+	G	B-
Connector PIN	X	1	2	3
RS485 terminal inside the MIN TL-XH US wire box	X	RS485A1	GND	RS485B1

SYN Partial & Whole Home Backup Box Connection

Backup Switch for Whole Home System--- SYN-US Connection

Leading Features

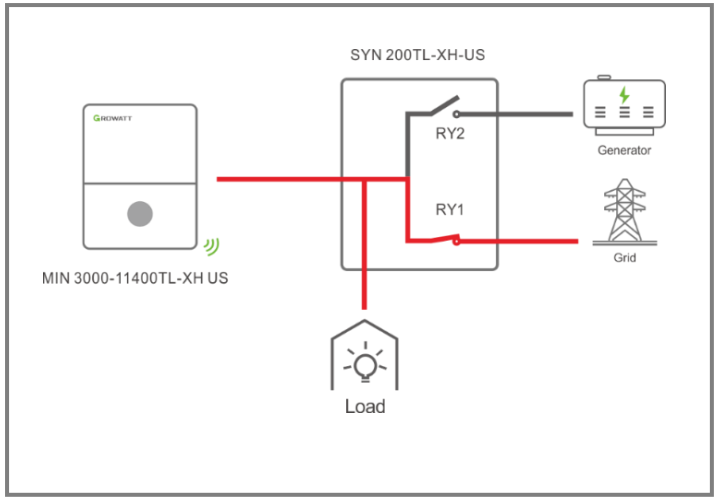


SYN 200-XH-US

- Easy to operate, integrated 200A circuit breaker on the grid side, no need for external circuit breakers.
- Integrated split-phase transformer, support 120V/240V split-phase output.
- Internal integrated generator, with remote wake-up and intelligent switch function.
- IP65 protection level.
- Certifications:UL1741.

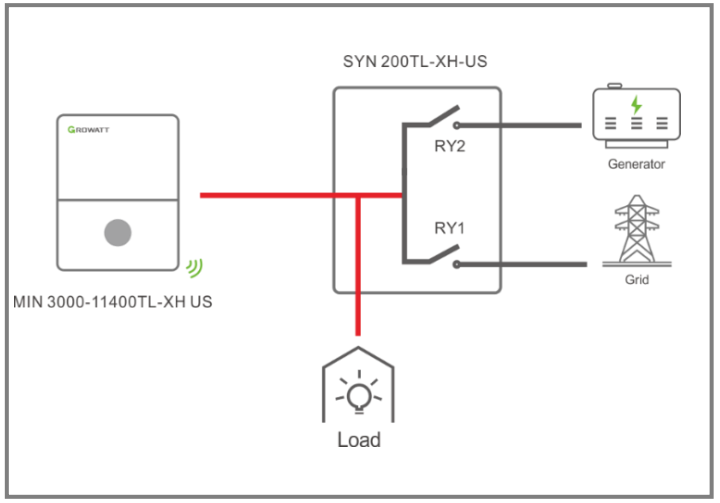
SYN200TL-XH-US Operation Mode

On Grid Mode



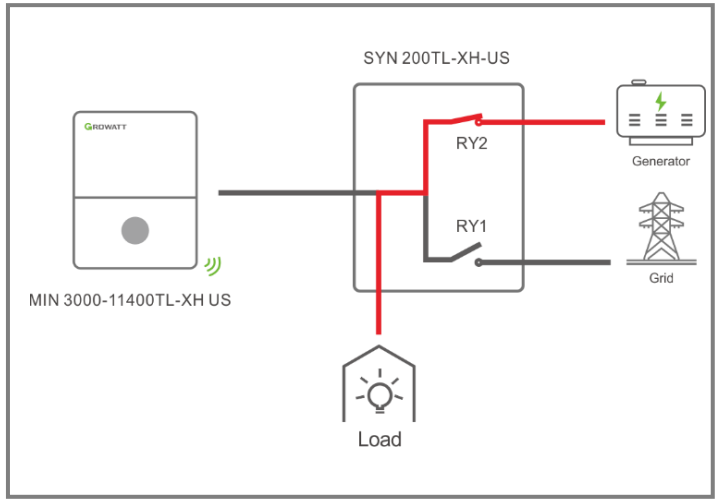
When the grid is normal and communication normal, the grid-side relay RY1 switch on and RY2 disconnected. At this time, the load is powered by the grid, and the inverter is connected to grid.

Off Grid Mode



Grid outage, SYN 200-XH-US detects grid abnormal, disconnect relay RY1, system switches to off-grid working mode, load is powered by the inverter, and relays RY1/RY2 are both disconnected.

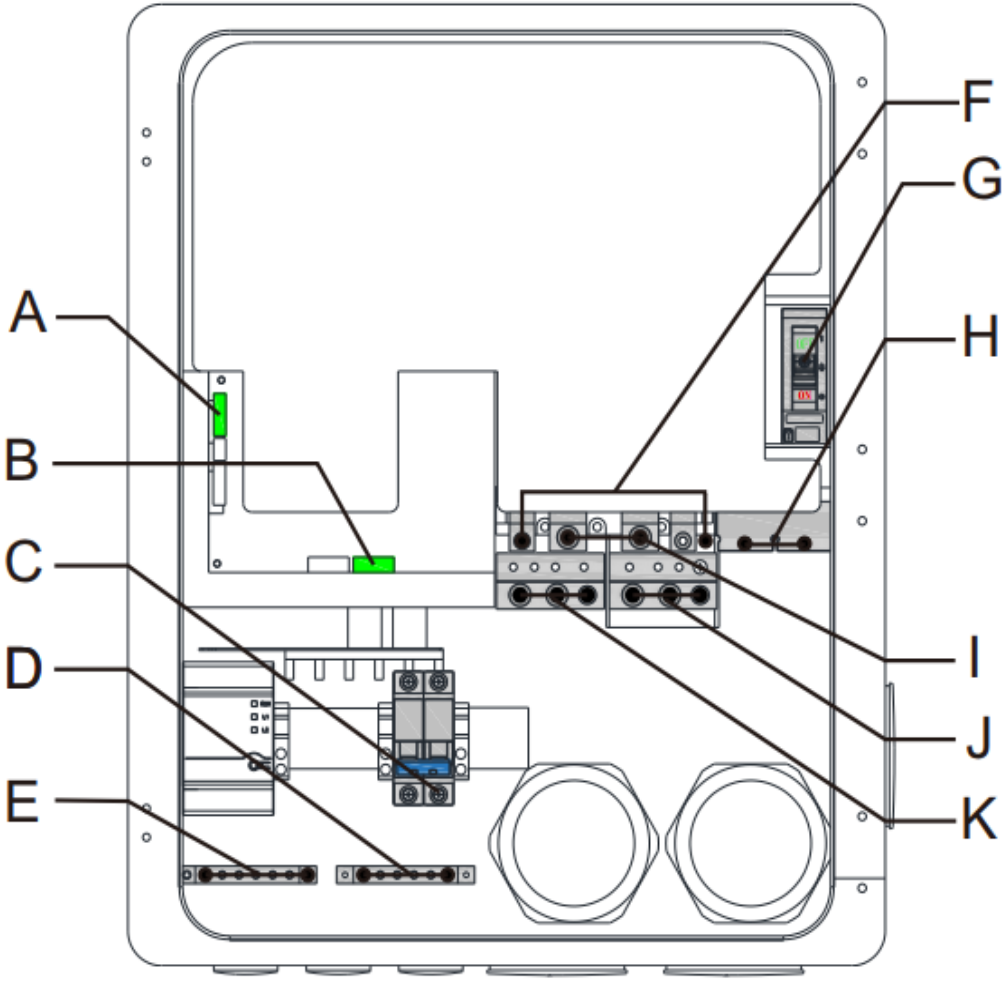
Generator Working Mode*



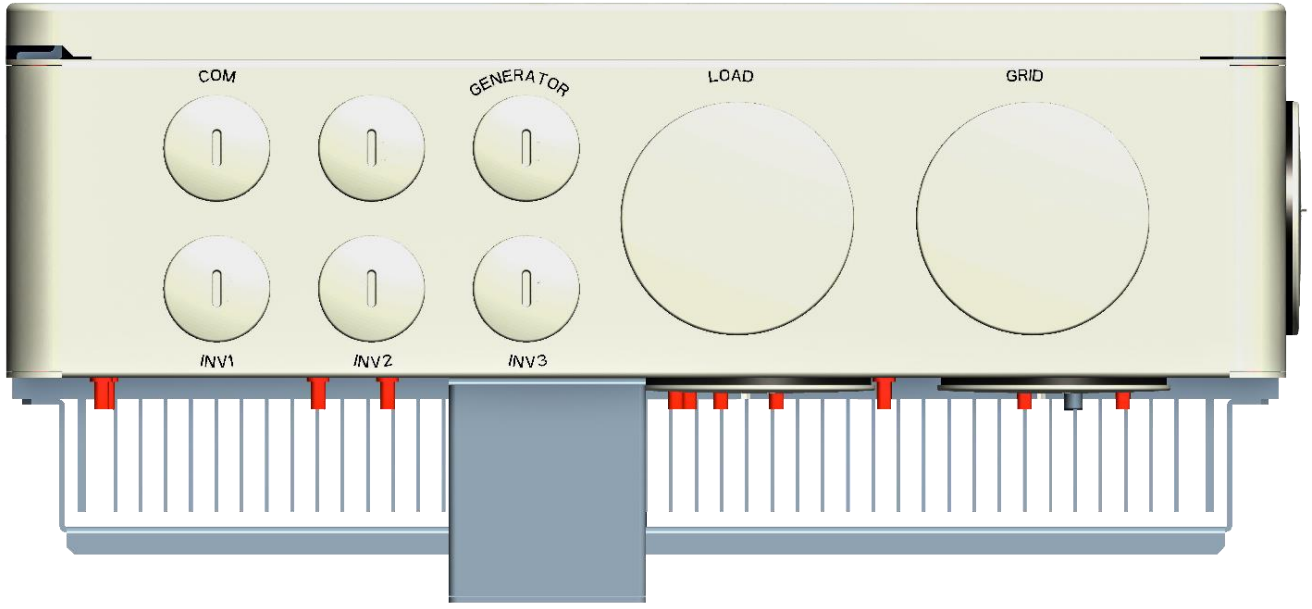
When grid abnormal, no sufficient PV and battery over-discharged, the system switches to the generator working mode, SYN 200-XH-US start up the generator, RY2 switch on, load is powered by the generator. Meanwhile, the inverter is in standby state, PV charges battery if have.

*Generator Working Mode ETA Q4 2024

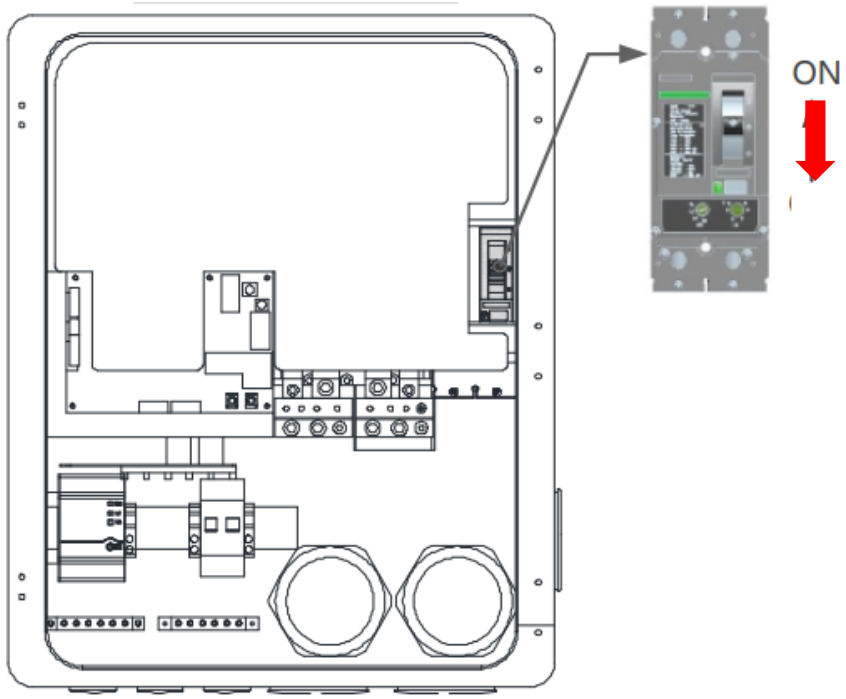
SYN200TL-XH-US Terminals



No.	Name	No.	Name
A	Inverter communication Terminals	G	Grid switch
B	Generator communication Terminals	H	Grid wiring port
C	Inverter wiring Terminals	I	Backup Loads
D	Main Ground Terminals	J	Main Neutral Terminals
E	Main Neutral Terminals	K	Main Ground Terminals
F	Generator wiring Terminals		



Connecting the SYN 200-XH-US to the Grid



Cables prepared by the customer:

	Use	Type	Size
1	Grounding Conductors (Load/Generator/Inverters)	Yellow-green jacketed or solid bare copper	6~1/0 AWG(Load/Generator) 10~8 AWG(Inverters)
2	AC output conductors (Load/Grid)	Multi-color jacket, copper	0-4/0AWG
3	Generator Input conductors		4~0 AWG
4	Inverter Input conductors		10~6 AWG
5	12V power output conductors	Red and black multi-color copper	16~14 AWG
6	Communication cable	CAT5E suggested	/

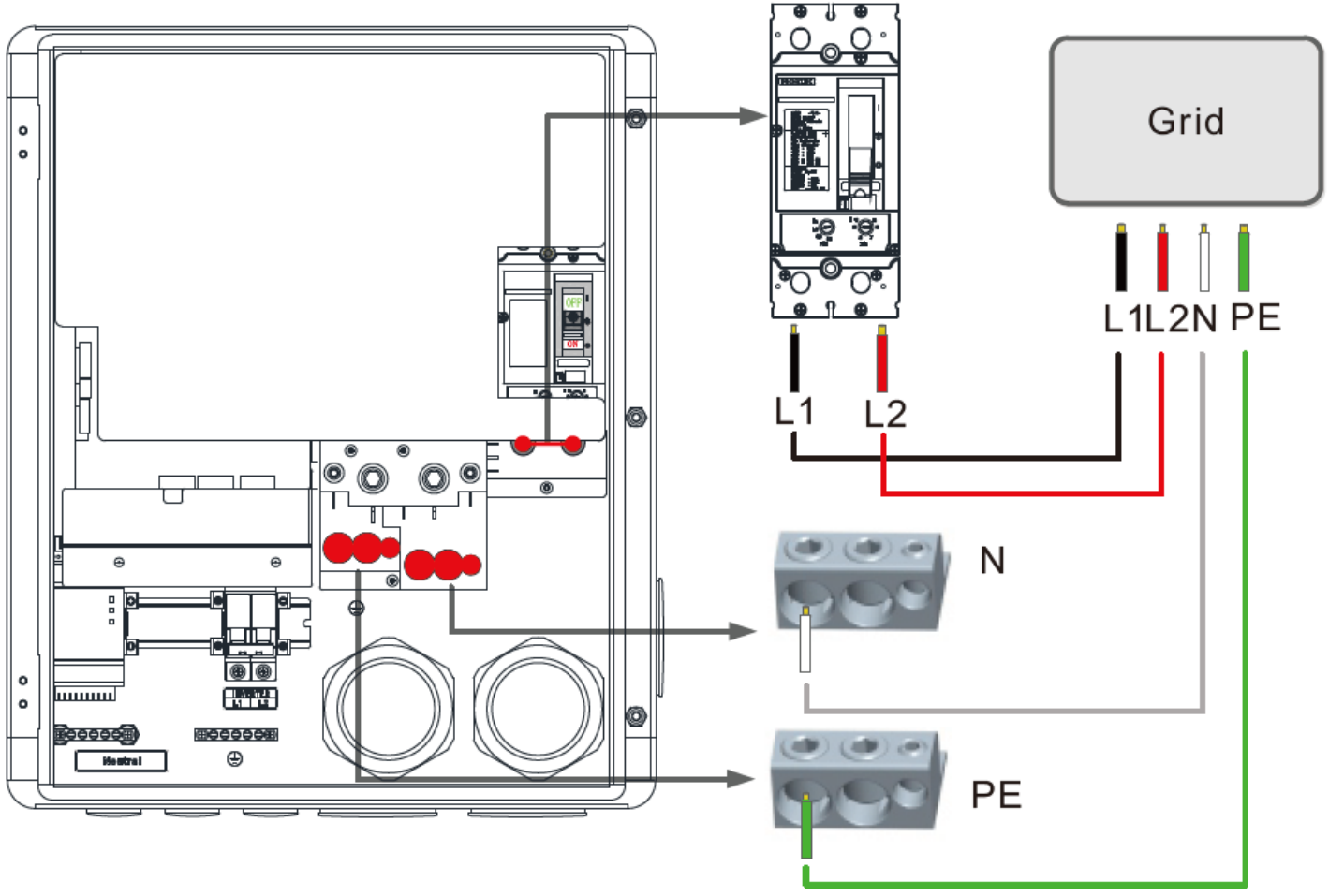
1.Release the Allen screws of the upper cover and open the upper cover.
2.Install a conduit of the required diameter into the Grid conduit entry. Use the conduit
holder to support the conduit.
3.For versions with circuit breaker. Pull down the main breaker until it shows OFF. Ensure that the main breaker is OFF, as shown

Note:

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

Connecting the SYN 200-XH-US to the Grid

2



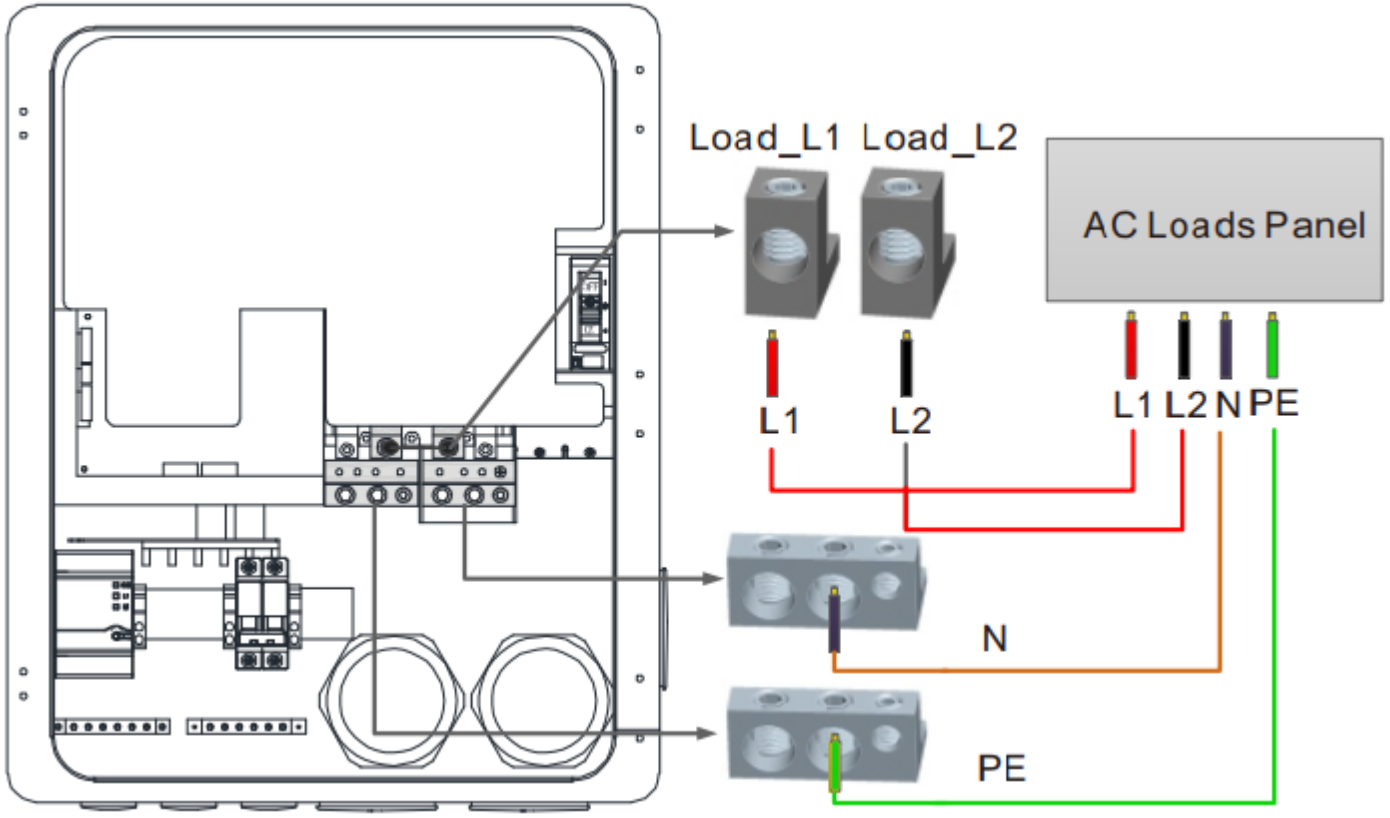
4.Pass the cable from the grid through the grid conduit to the terminals of the circuit breaker.
Tighten the terminal screws with a torque of 310 in*lbs / 35N*m.

5. Connect the neutral and grounding wires to the neutral and grounding terminals.
Tighten the terminal screws with a torque of 310in*lbs / 35N*m.

NOTE: Cable size:
L and N:0-4/0AWG, PE:6~1/0 AWG

Connecting the SYN 200-XH-US to the Load panel

2



1.Install a conduit of the required diameter into the Loads conduit entry. Use the conduit holder to support the conduit.

2.Pass the cable from the AC Loads panel through the Loads conduit to the Load_L1 and Load_L2 terminals of the SYN 200-XH-US.
Tighten the terminal screws with a torque of 310in*lbs / 35N*m.

3.Connect the neutral and grounding wires to the neutral and grounding terminals.
Tighten the terminal screws with a torque of 310in*lbs / 35N*m, as shown on the right.

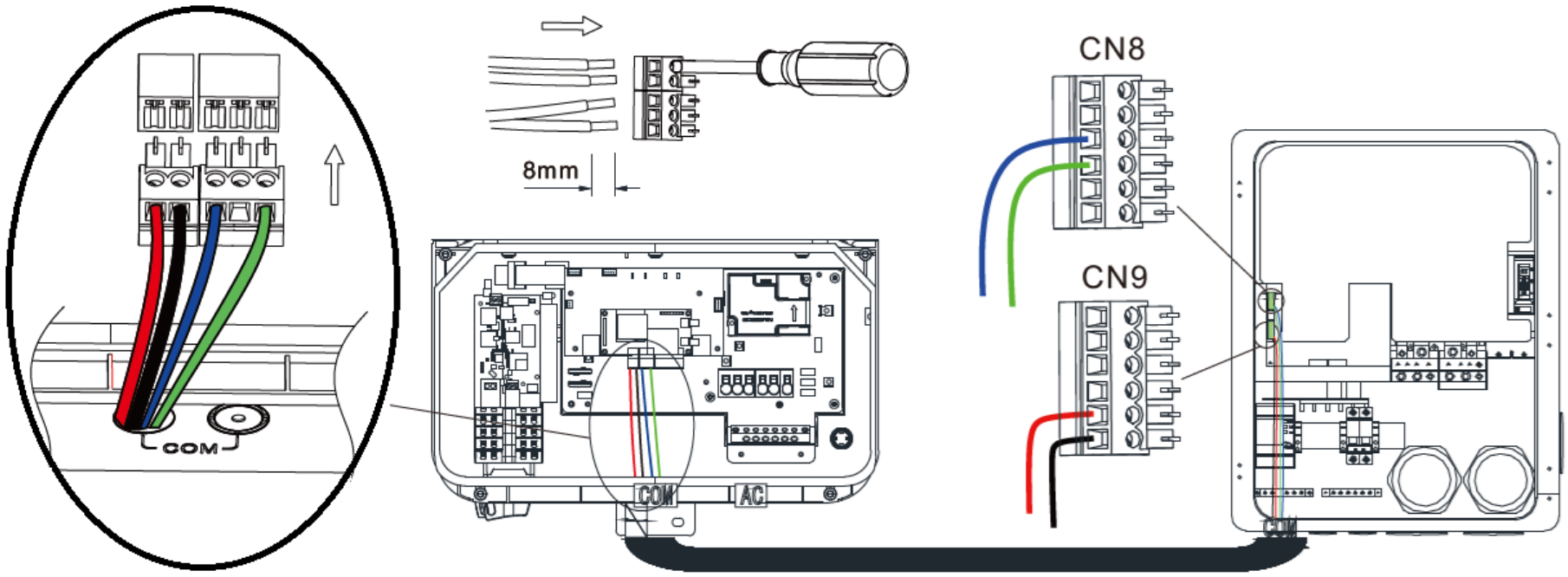
NOTE: Cable size:
L and N:0-4/0AWG, PE:6~1/0 AWG

Connecting the SYN 200-XH-US to the Inverter

1. Insert the cable into MIN TL-XH-US inverter RS485 connector(3 pin) and power connector(2 pin) ,as shown in follow figures.

2. Insert the cable into SYN 200-XH-US RS485 connector(CN8) and power connector(CN9) ,as described in follow figures.

3. Connect the cable from MIN TL-XH-US inverter to SYN 200-XH-US.



Power and Communication connection between SYN 200-XH-US and Inverter
(Cable requirement: Shielded CAT5E suggested)

Connecting the SYN 200-XH-US to the Inverter

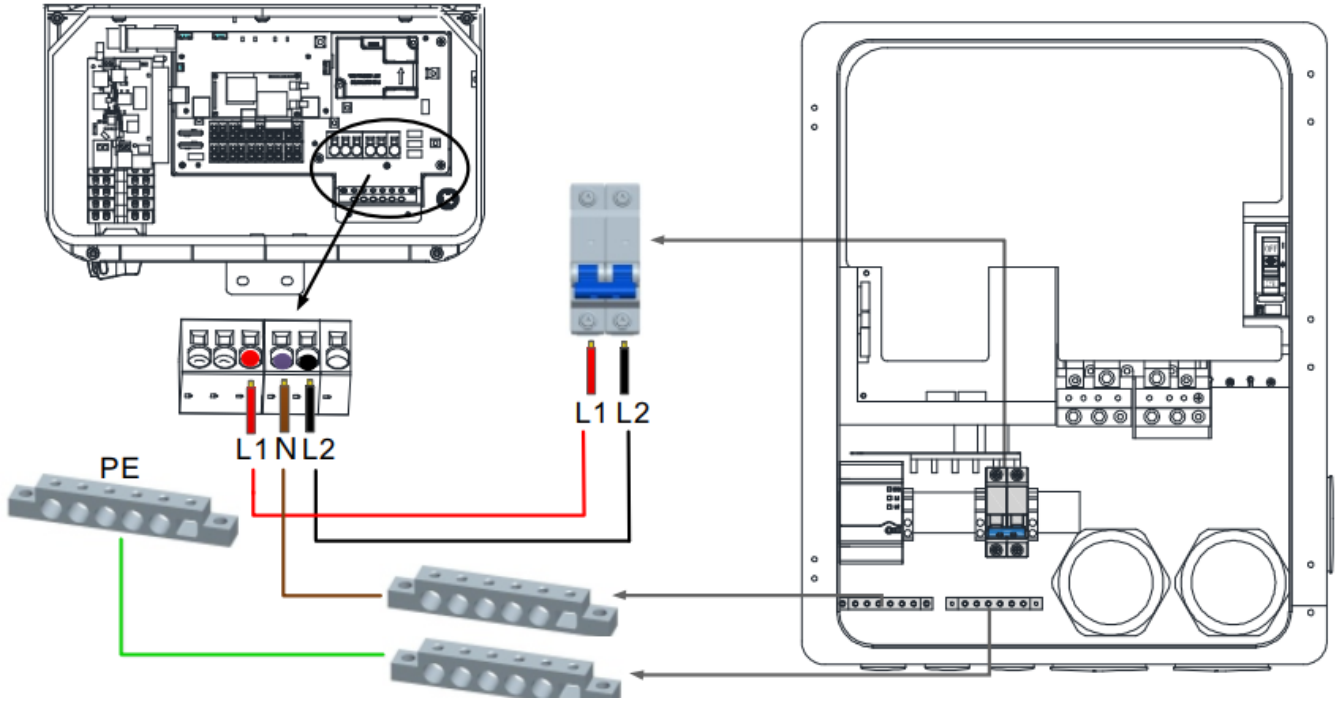
Installation inverter AC power cables

1. Install a conduit of the required diameter into the INV conduit entry. Use the conduit holder to support the conduit.

2. Pass the cable through the INV conduit.

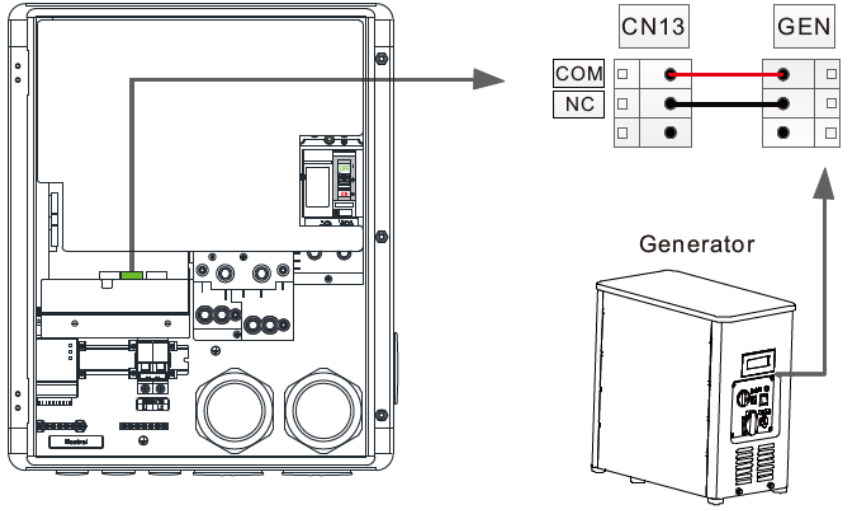
3. Connect the neutral and grounding cables to the corresponding neutral and grounding terminals. Tighten the terminal screws with a torque of 18 in*lbs / 2 N*m.

4. Connect the GRID L1 and GRID L2 terminal of the MIN TL-XHUS inverter to the INV Breaker terminal of SYN 200-XH-US.
   Tighten the terminal screws with a torque of 18 in*lbs / 2 N*m.



Power cable connection between SYN 200-XH-US and Inverter
(Cable size: L and N:6-5 AWG, PE:6~1/0 AWG)

Connecting the SYN 200-XH-US to Generator *

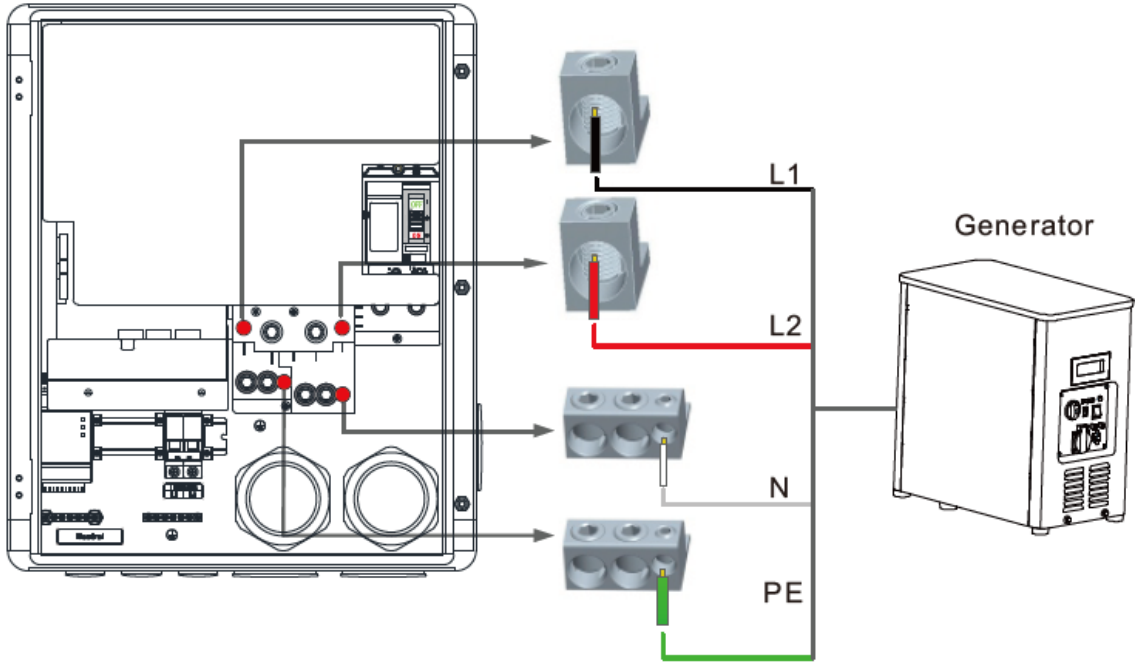


Communication connection between SYN 200-XH-US and Generator

Note:

1.The COM/NC signal of CN13 is the remote control switch signal of the generator.
2.The above only shows the wiring method of the generator with 2-wire start mode. For other types of generators, please refer to the generator wiring guide.

1, Communication connection between SYN 200-XH-US and Generator
(Cable requirement: Shielded CAT5E suggested)



Connection to the Generator

2, Power cable connection between SYN 200-XH-US and Generator
(Cable size: L and N:4-0 AWG, PE:6~1/0 AWG)

*Generator Working Mode ETA Q4 2024

Manual Bypass Operation / Bonding Jumper

In case of the SYN 200-XH-US fault. In order to ensure household electricity, you can manually switch to the mains bypass state by performing the following operations.

1.Shutdown the entire system, please refer to section SYN quick guide 5.2.

2.Insert the 3-pin terminal with the short wire into the 3-pin interface of the SYN 200-XH-US,as shown in the right figure1.

3.Make sure that the AC circuit breaker of the grid is disconnected, and manually rotate the white switch counterclockwise to the "ON“ position, as shown in the right figure2.

4.Power up the entire system, please refer to SYN Quick Guide section 5.1.

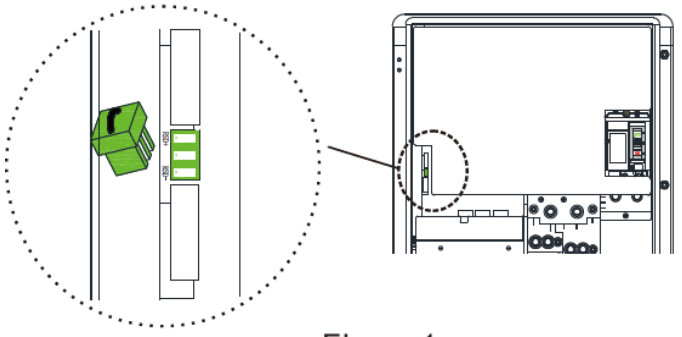


Figure1

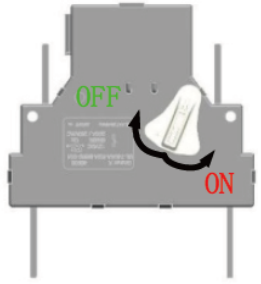
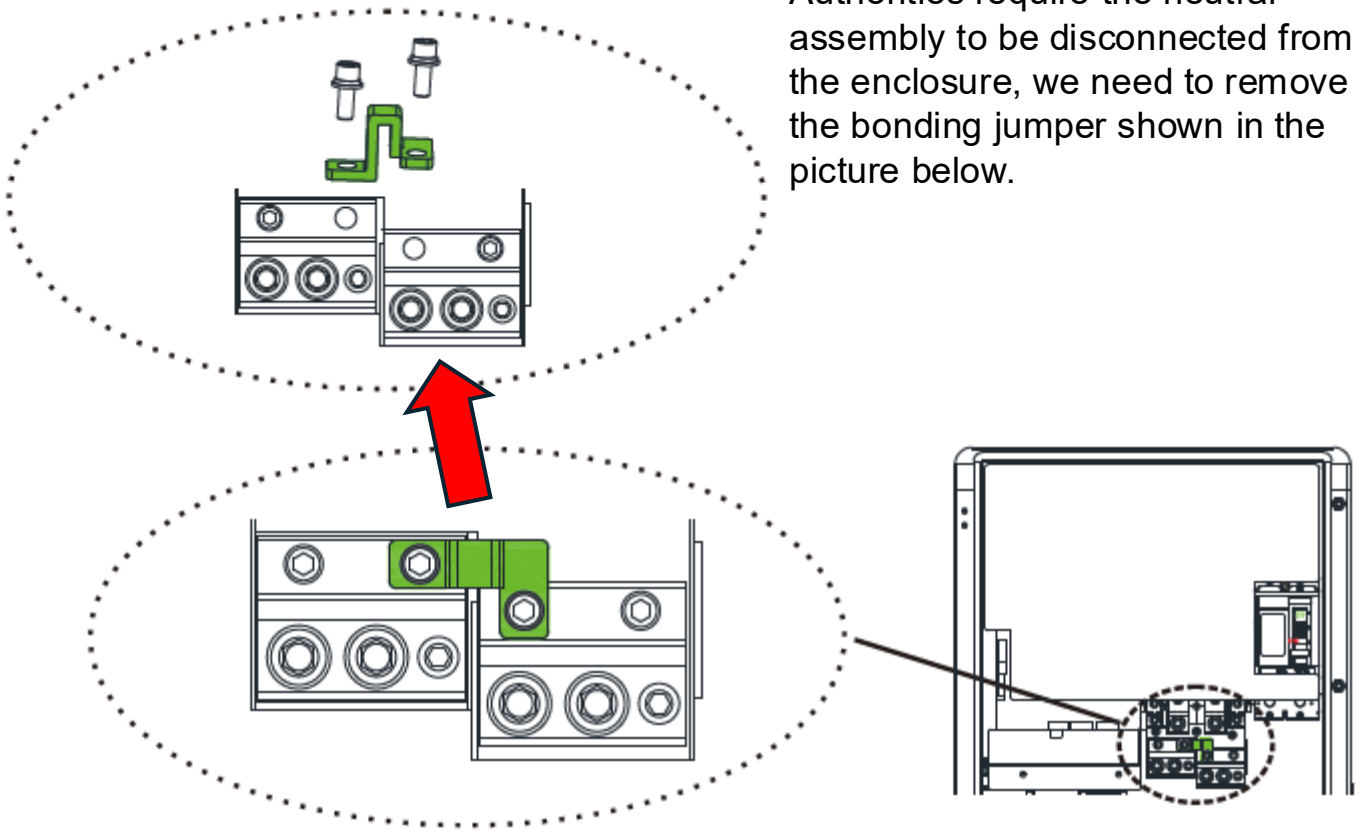


Figure2

Note: Where Electrical Inspection Authorities require the neutral assembly to be disconnected from the enclosure, we need to remove the bonding jumper shown in the picture below.



*Generator Working Mode ETA Q4 2024

APX HV Residential Battery Installation

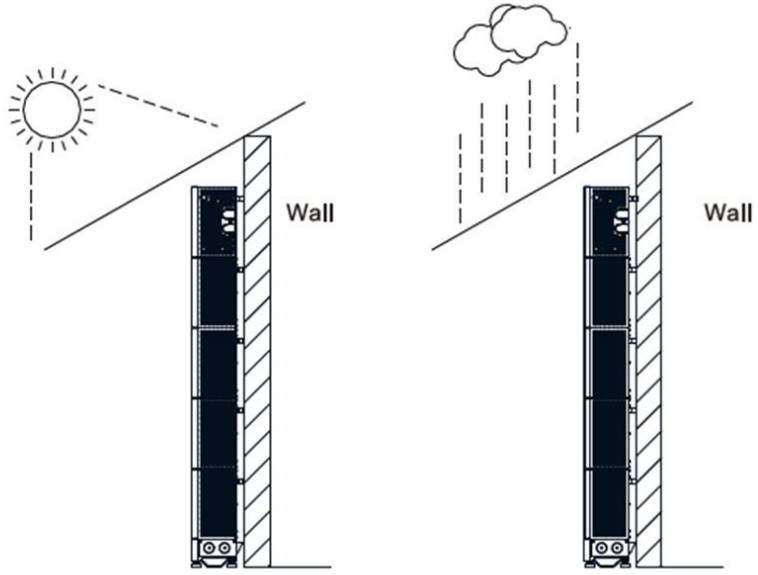
APX Residential Battery Installation

Environment requirements

M8 2 Nm (17.6inlbs)

M6 2 Nm (17.6inlbs)
M4 2 Nm (17.6inlbs)
M3 1 Nm (8.8inlbs)

Installation environment requirement



Note: When installed outdoors, build a sun/rain shelter to protect the battery system from sunlight and rain.

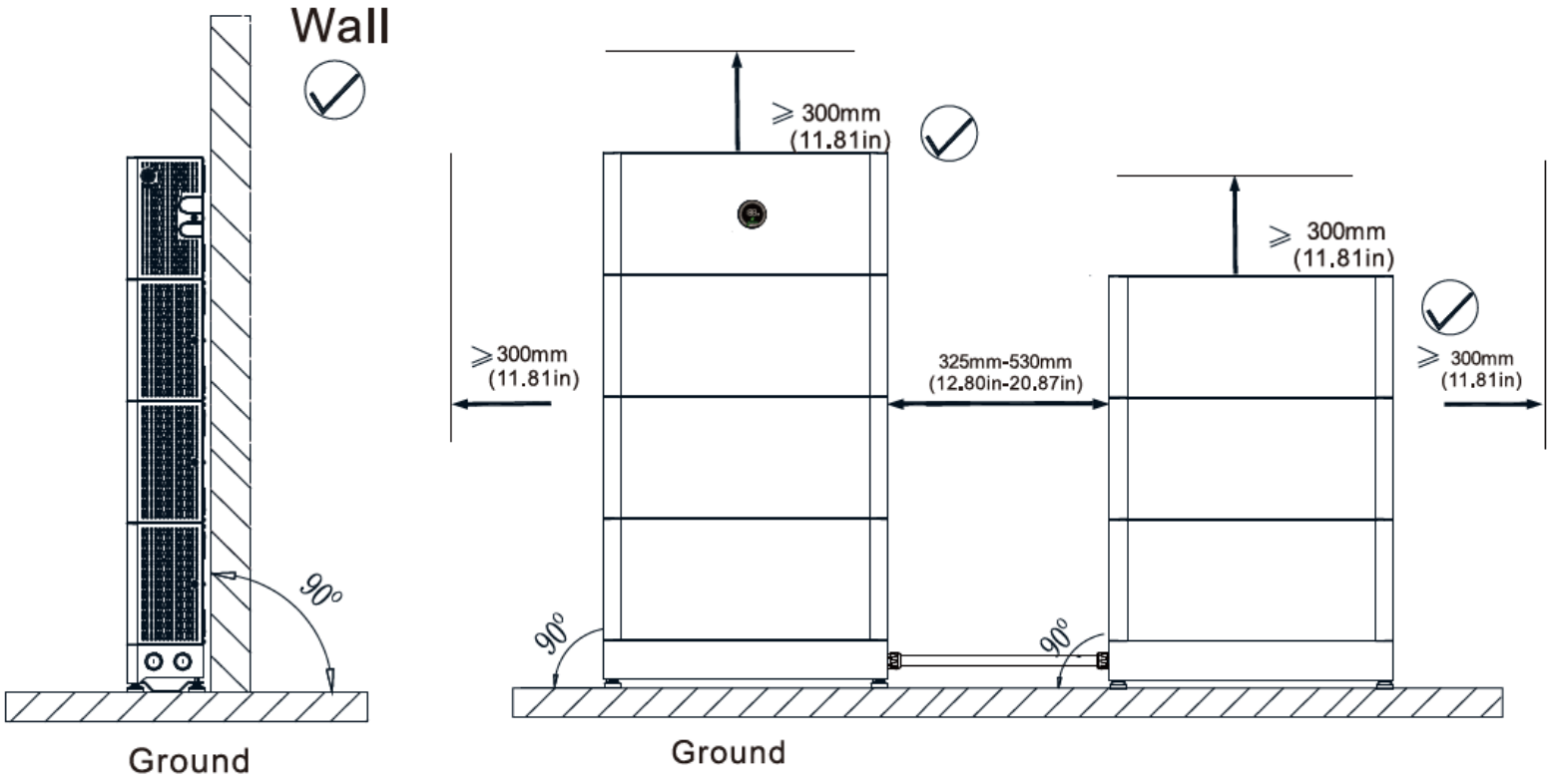
Battery is heavy, handle with care.

Internal arcing risk, do not open the module.

Keep away from heat and have a fire extinguisher ready during install.

3.Floor-mounted installation

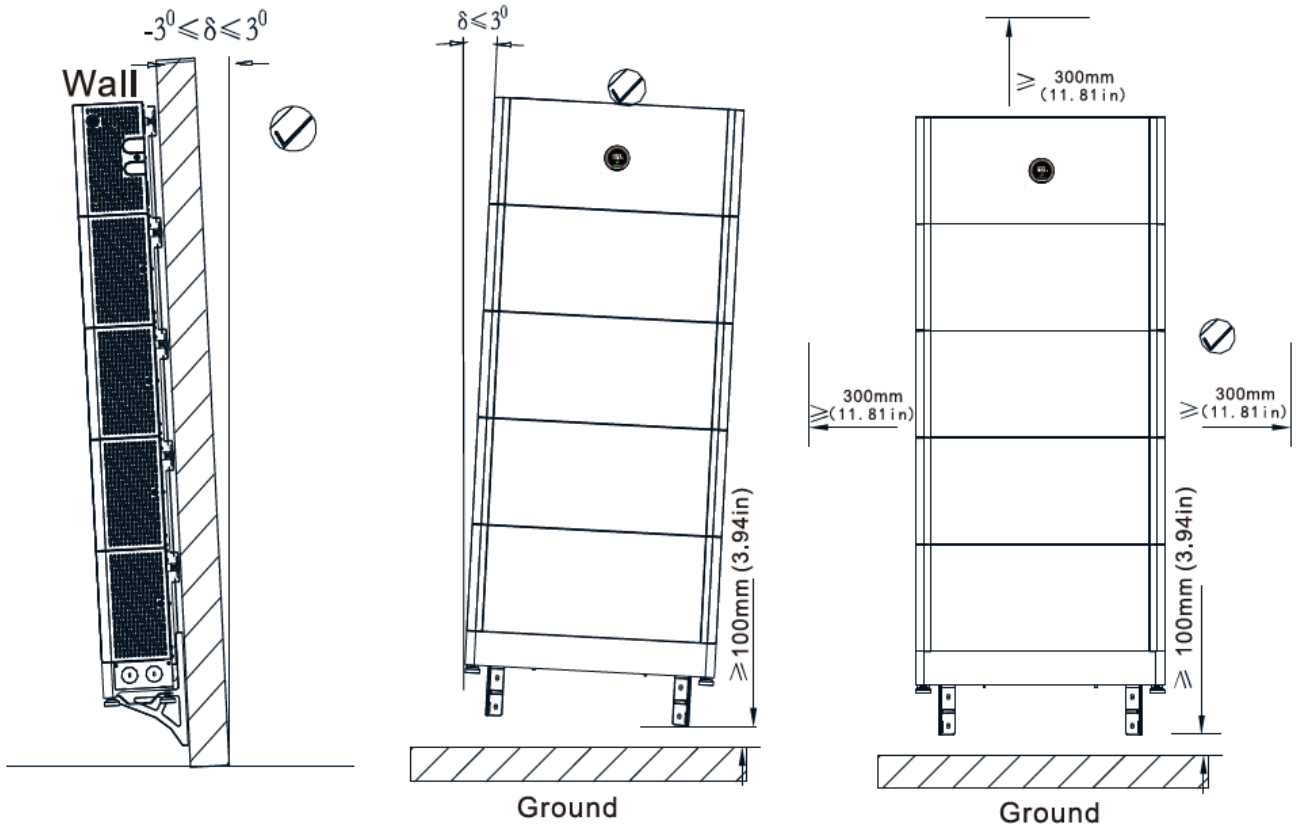
3-1 Installation location requirements



Note:For the floor-mounted installation with the base, a maximum of six battery modules can be configured. If the number of the battery modules to be installed is greater than four, you are advised to install them in 2 columns.

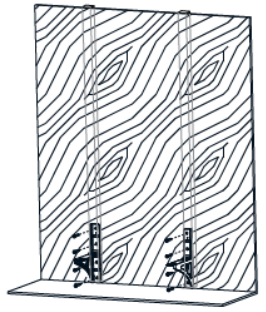
APX Residential Battery Installation

4.Wall-mounted installation



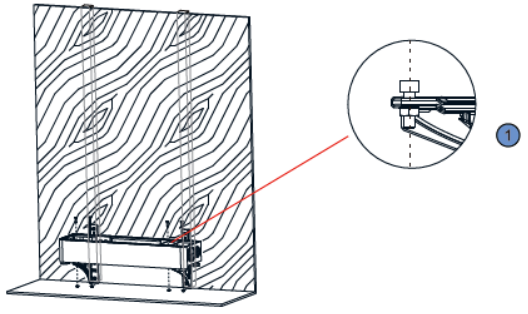
Note: When mounted on the wall, a maximum of four battery modules can be stacked. Please ensure that the load-bearing capacity of the wall exceeds 280 kg (617.29 lbs).

1 Installing the wall brackets



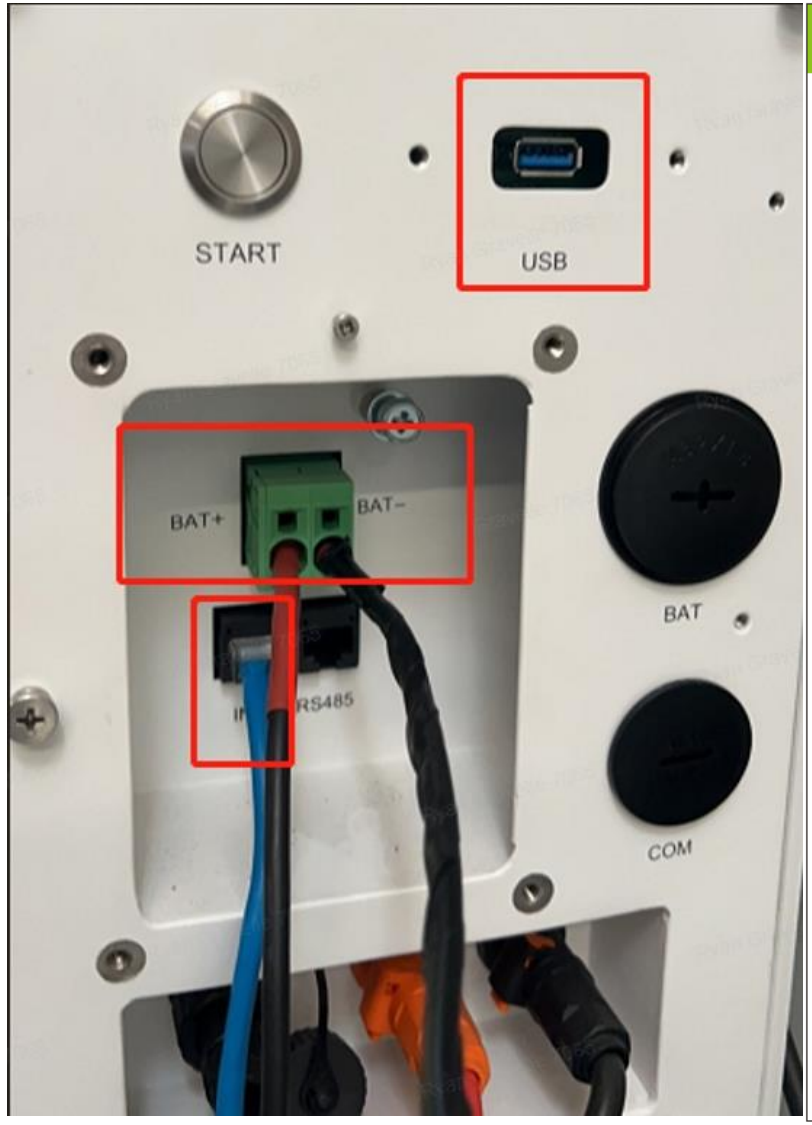
1. Stick the paper template for drilling holes onto the wall and keep it level. Please select the appropriate installation dimensions (12 in, 16 in, 20 in or 24 in), and mark the hole positions using a marker
2. Fix the mounting bracket to the wall using the M8*95 screws

2 Installing the base

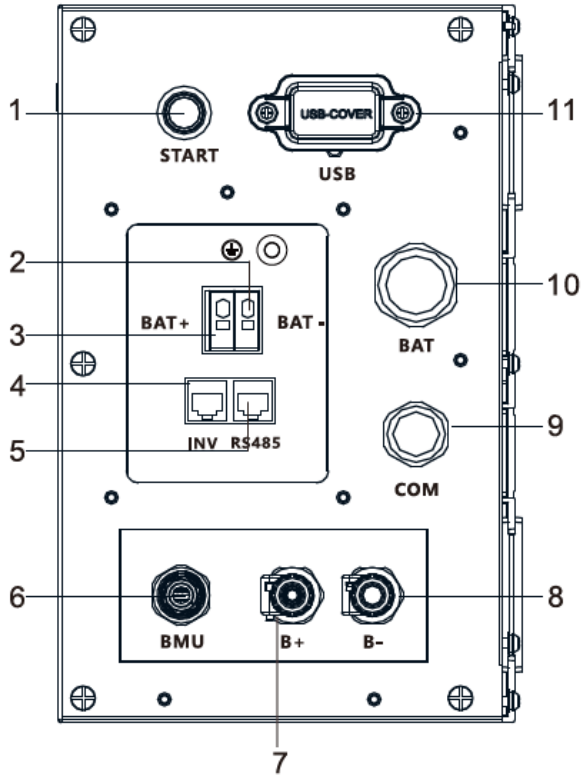


1. Place the base onto the mounting bracket
2. Insert the four M6*20 screws into the holes on the base, then tighten them with the M6*20 bolts from the bottom

APX Residential Battery Installation



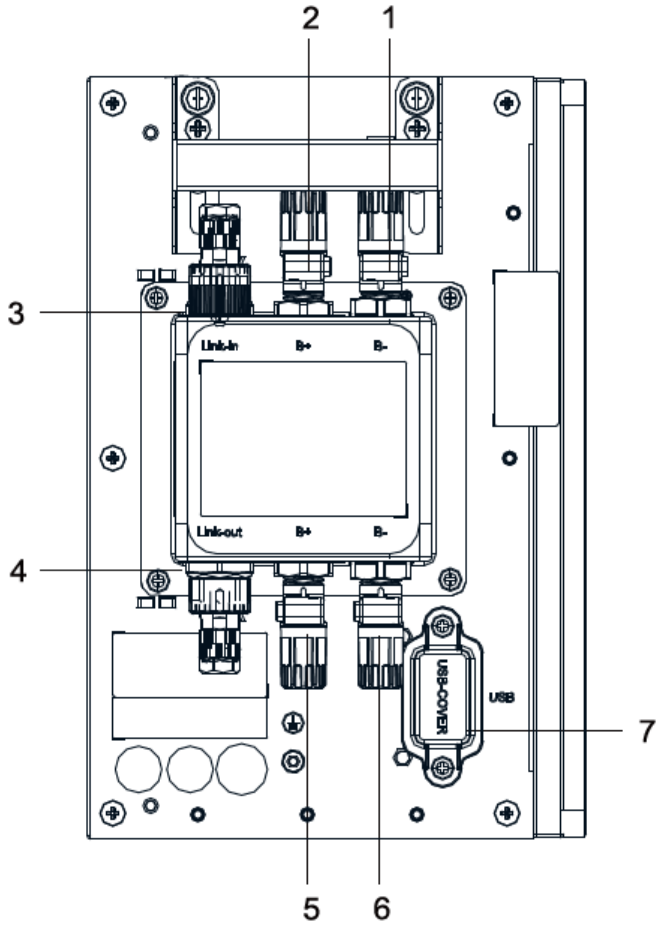
5-1 APX 55042-P0-US terminal & key description



1	**START**	Start key
2	**BAT-**	Battery negative terminal connected to the INV
3	**BAT+**	Battery positive terminal connected to the INV
4	**INV**	Communication port connected to the INV
5	**RS485**	Communication port connected to another Power Module(RS485)
6	**BMU**	Communication port connected to the Battery Module(Link-in)
7	**B+**	Connect to the positive battery terminal of the Battery Module (B+)
8	**B-**	Connect to the negative battery terminal of the Battery Module (B-)
9	**COM**	Inverter communication cable routing hole
10	**BAT**	Battery positive/negative cable routing hole
11	**USB**	USB terminal

APX Residential Battery Installation

5-2 APX 5.0P-B1-US terminal description



1	**B-**	Battery negative terminal Connect to another BM (B-) or the PM (B-)
2	**B+**	Battery positive terminal Connect to another BM (B+) or the PM (B+)
3	**Link-in**	Communication terminal Connect to another BM (Link-out) or the PM (BMU)
4	**Link-out**	Communication terminal Connect to another BM (Link-in)
5	**B+**	Battery positive terminal Connect to another BM (B+)
6	**B-**	Battery negative terminal Connect to another BM (B-)
7	**USB**	USB terminal

APX Residential Battery Installation

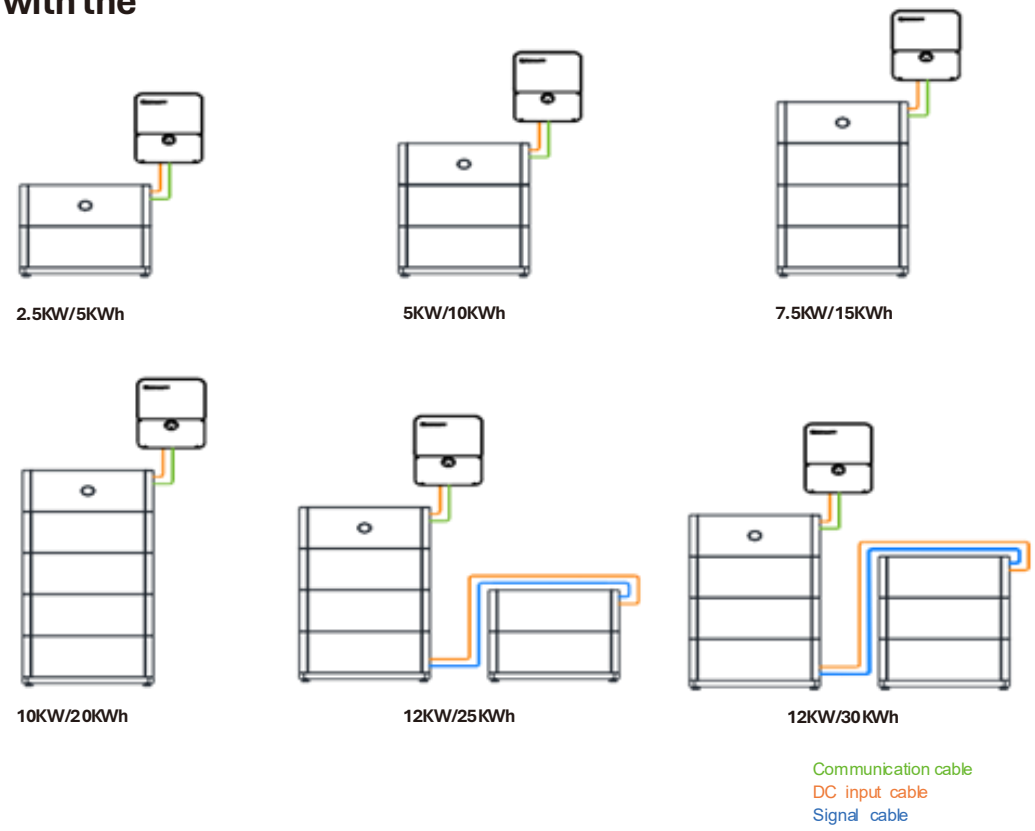
Battery Capacity Description

The battery supports power and capacity expansion.

One power control module supports a maximum of six battery expansion modules.

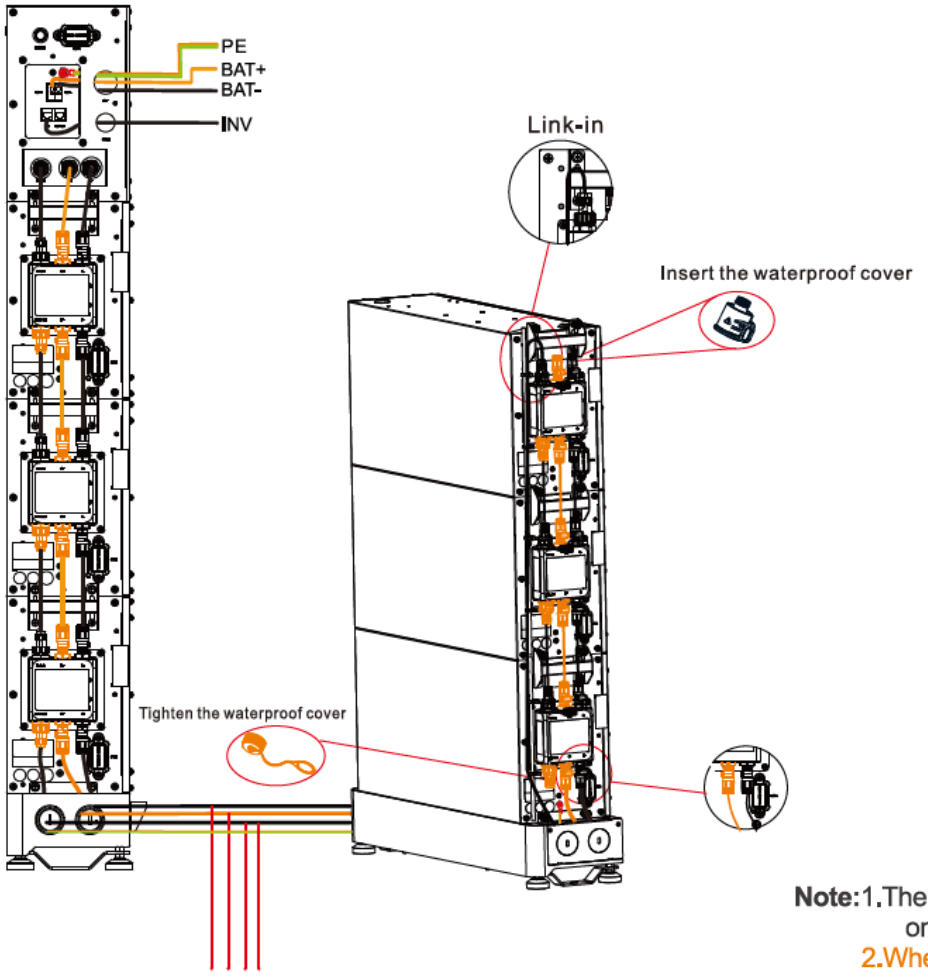
Each battery module allows for an additional 2.5kW discharge up to 12kW with the MIN TL-XH-US 11.4kW inverter.

Configuration	PM	BM	Max kW	Total kWh
Single	1	1	2.5	5
Single	1	2	5	10
Single	1	3	7.5	15
Single	1	4	10	20
Single	1	5	12	25
Single	1	6	12	30



APX Residential Battery Installation

5-4 System wiring diagram

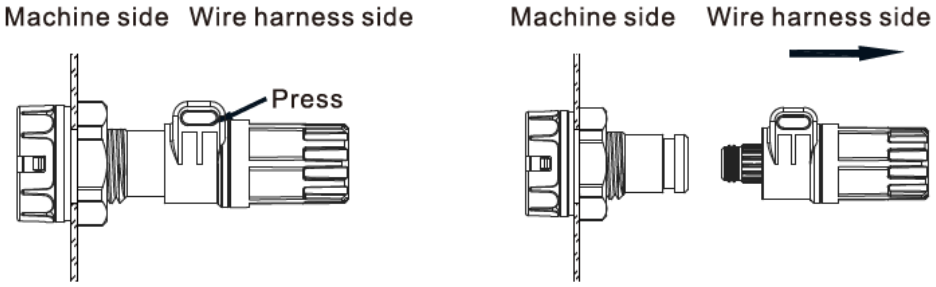


APX 5.0P-B1-US Parallel extension cable

wiring sequence:

Grounding cable ⇨ Communication cable ⇨ Power cable

Power terminal

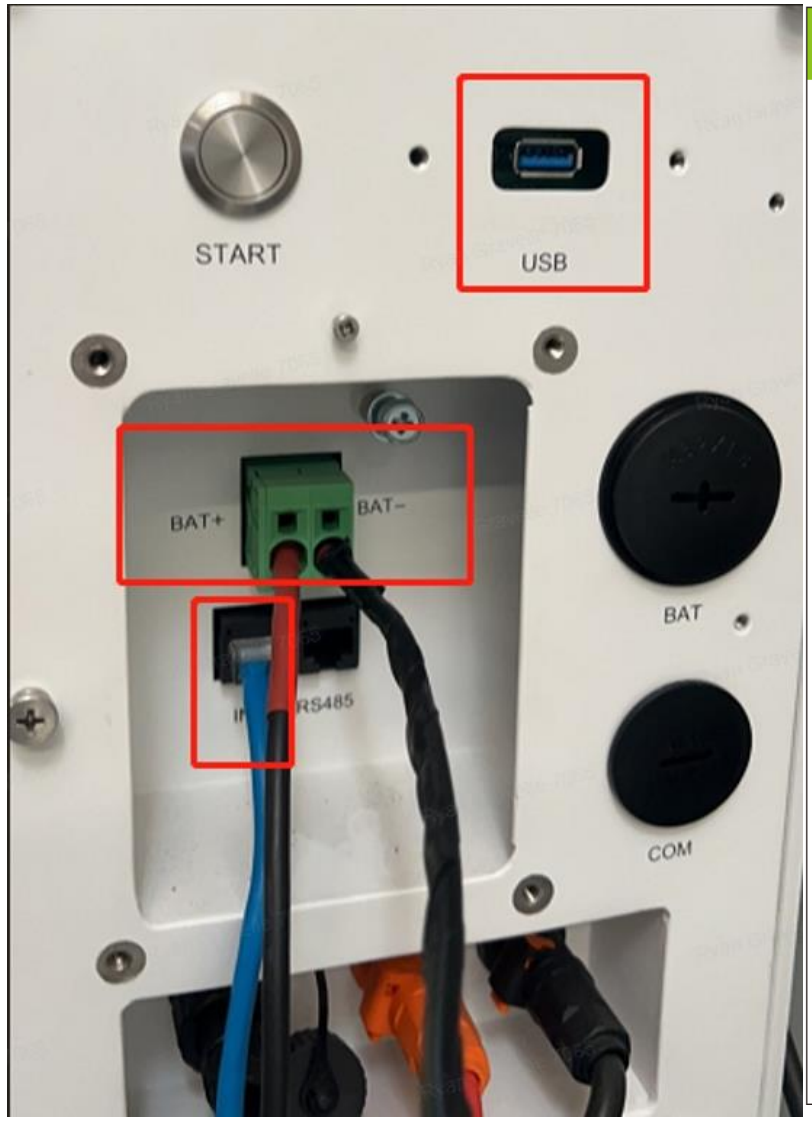


Note: Press the position indicated in the figure above before disconnecting the power terminal.

Note: 1.The RJ45 connector (in orange) of the communication cable is to be connected to the Link-out port (in orange) on the battery module.

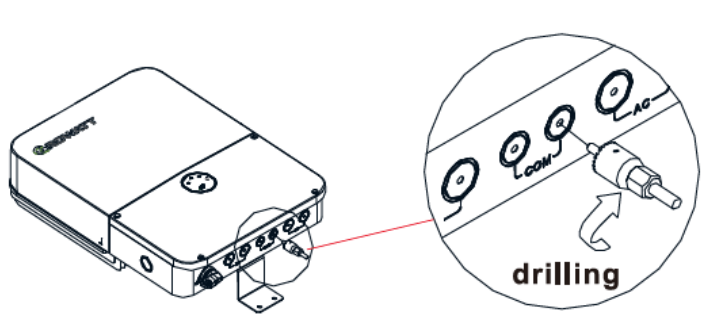
2.When wiring the communication cable, remember to tighten the protective cover of the communication cable; otherwise it might undermine the waterproof performance. (Water penetration caused by failure to do so is beyond the scope of warranty.)

APX Residential Battery Installation

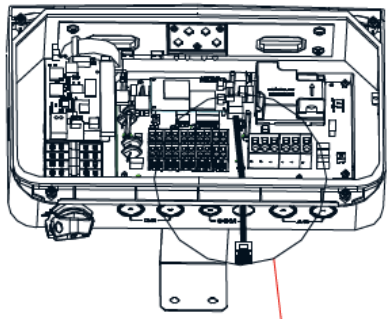


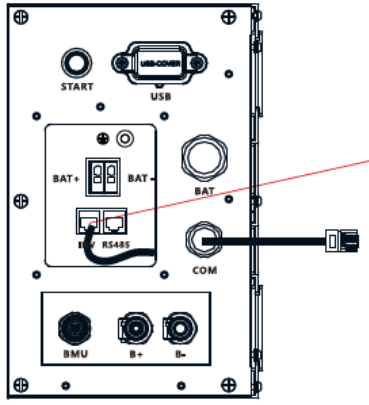
5-6 **Connecting to the inverter**

Note: Please be careful with the components inside the inverter during drilling

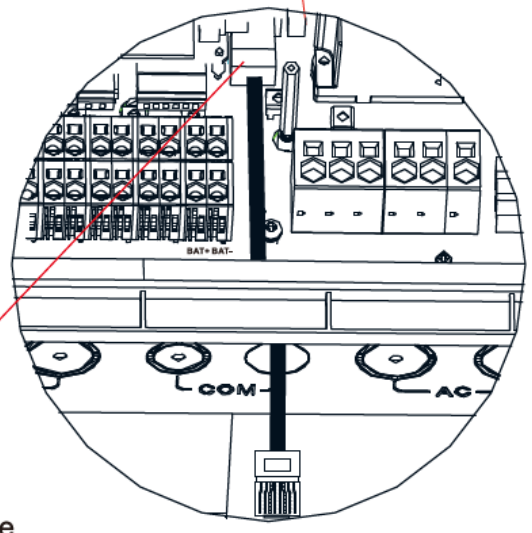


MIN 3-11.4K TL-XH-US

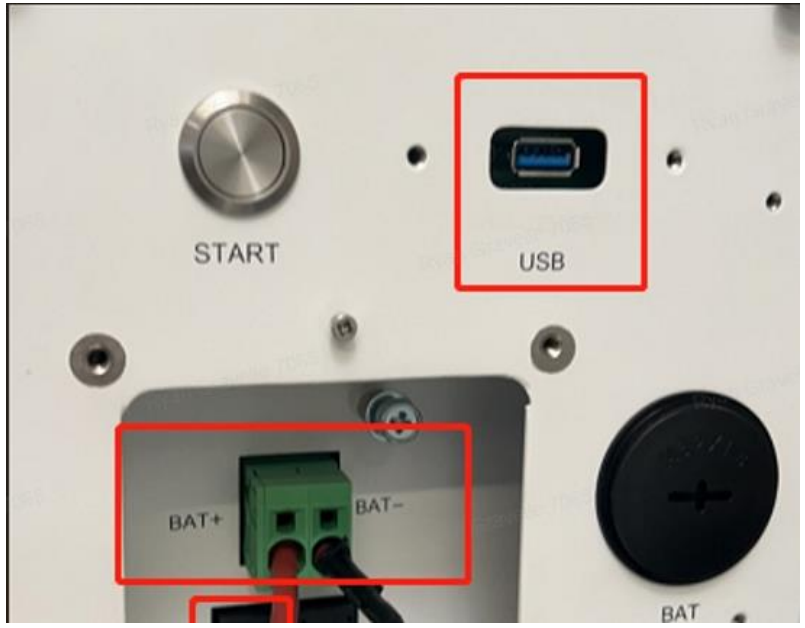


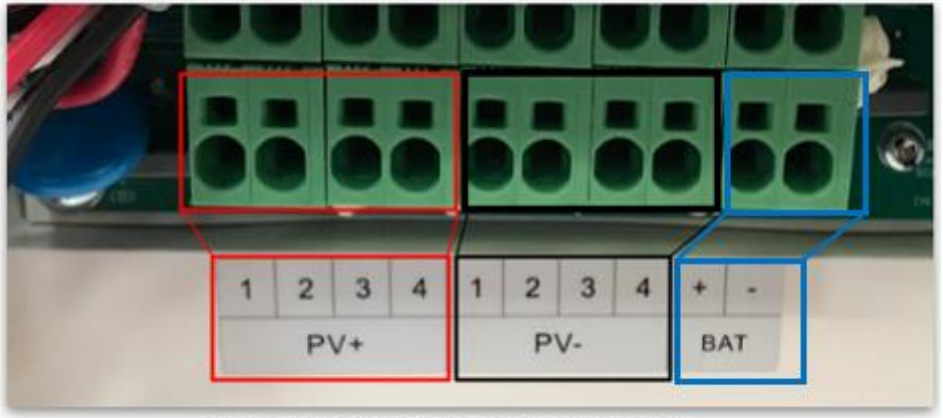


Communication cable



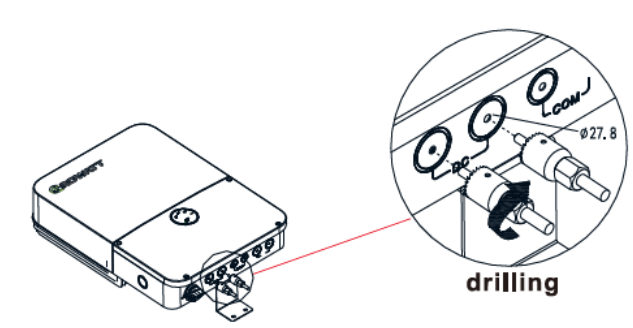
APX Residential Battery Installation

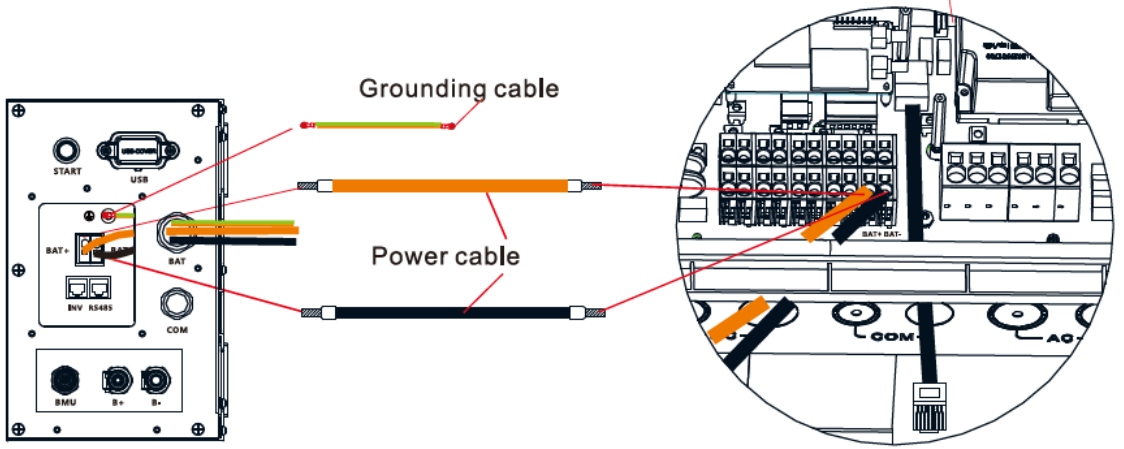




Inverter PV DC terminal blocks

Note: Please be careful with the components inside the inverter during drilling



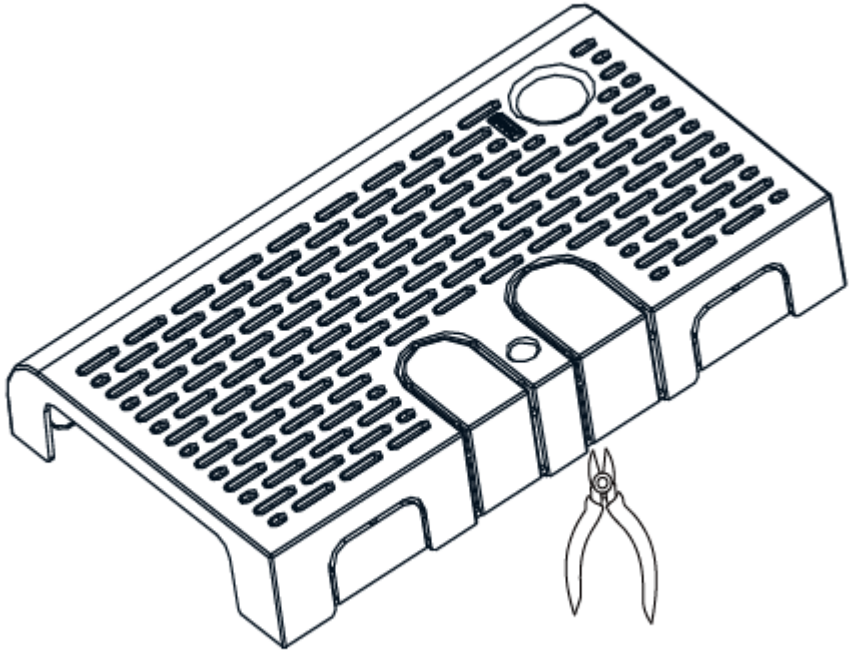


Please prepare the cables listed below before electrical connections (recommended cable length<3m/118.1in)

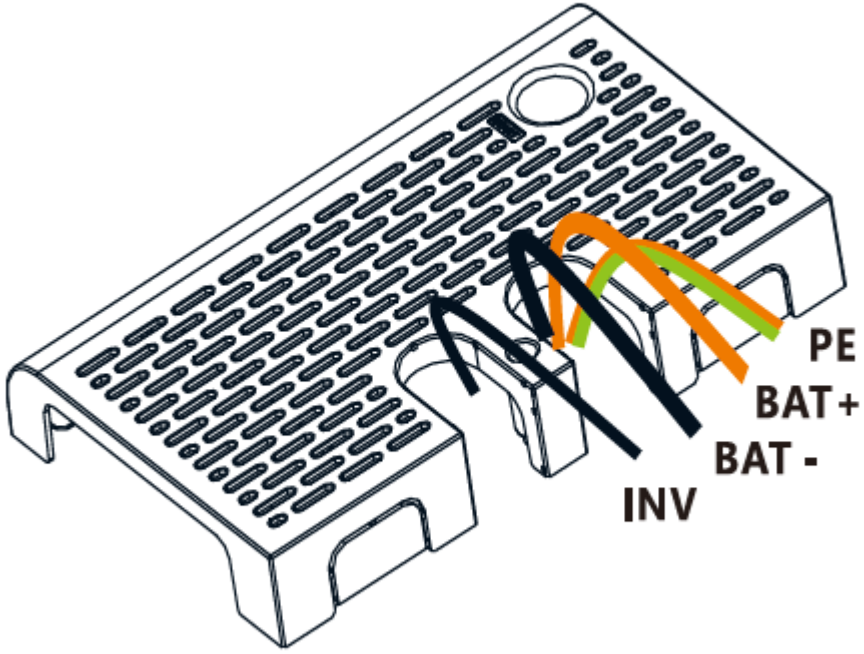
No.	Cable name	Type	Recommended specification
1	Grounding cable	One yellow and green multi-core copper cable	AWG10≤Wire diameter≤AWG8
2	Power cable	Red and black multi-core copper cables	AWG10≤Wire diameter≤AWG8
3	Communication cable	CAT5E suggested	/

APX Residential Battery Installation

Routing cables out of the cable hole

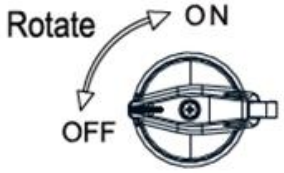


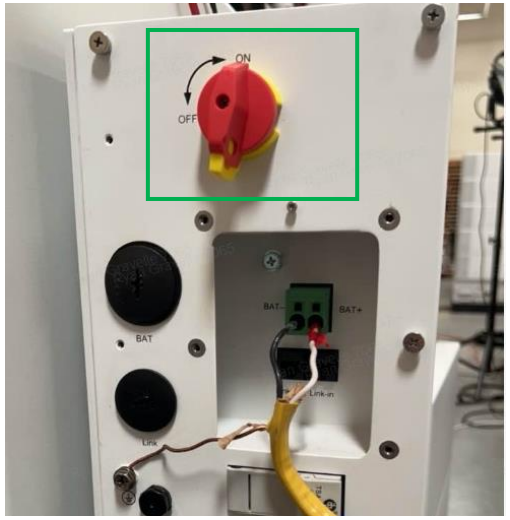
APX 55042-P0-US Right trim-cover

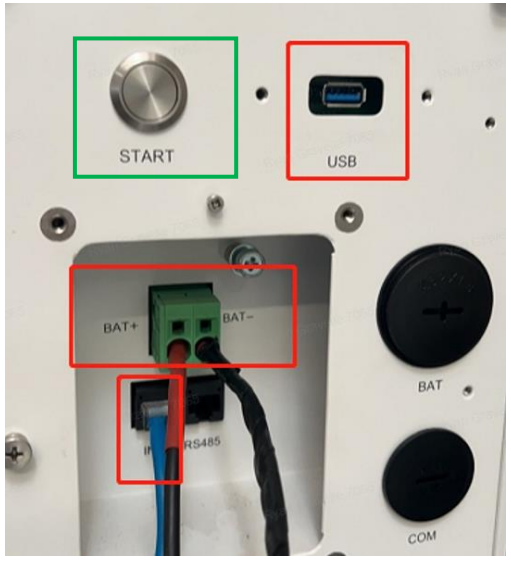


APX Residential Battery Installation

7.Powering on/off the battery system

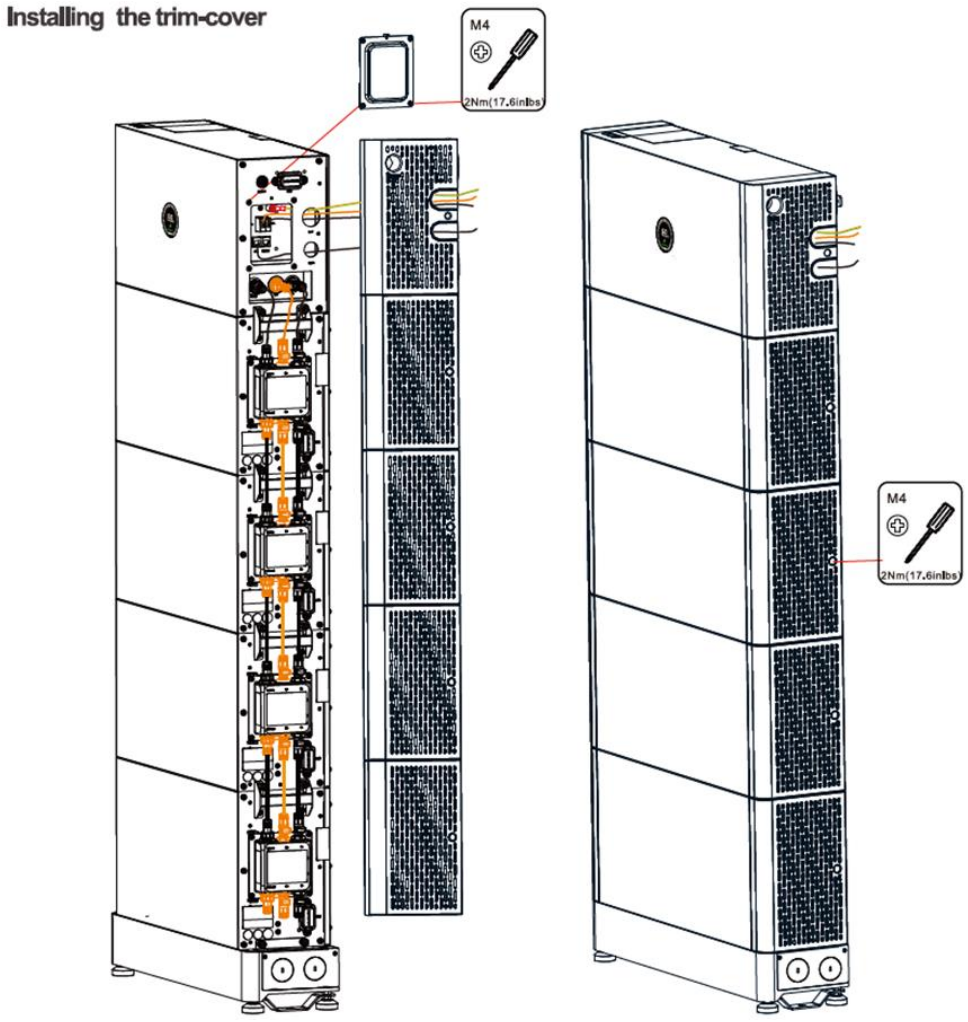
Power on	1.Turn on the DC Switch 2.Press the Start key for more than 5S	
Power off	Turn off the DC Switch (wait for over 90S)	





Note: 1. Before performing maintenance and repair work, ensure that the AC circuit breaker, DC switch of the INV, and DC switch of the APX Power module are in the OFF position. Wait for 15 minutes after the system is powered OFF and make sure that the LOGO (GROWATT) indicator on the APX is off. Do not perform any operations until the system has completely shut down.
2.The content of this document is continually reviewed and amended, where necessary. Growatt reserves the right to make changes to the material at any time and without notice. Unless otherwise agreed, this document is for quick installation guidance only. All information and suggestions in this document do not 、 constitute a warranty of any kind, express or implied. Growatt reserves all rights for final interpretation.

APX Residential Battery Installation



Wire connection sequence:

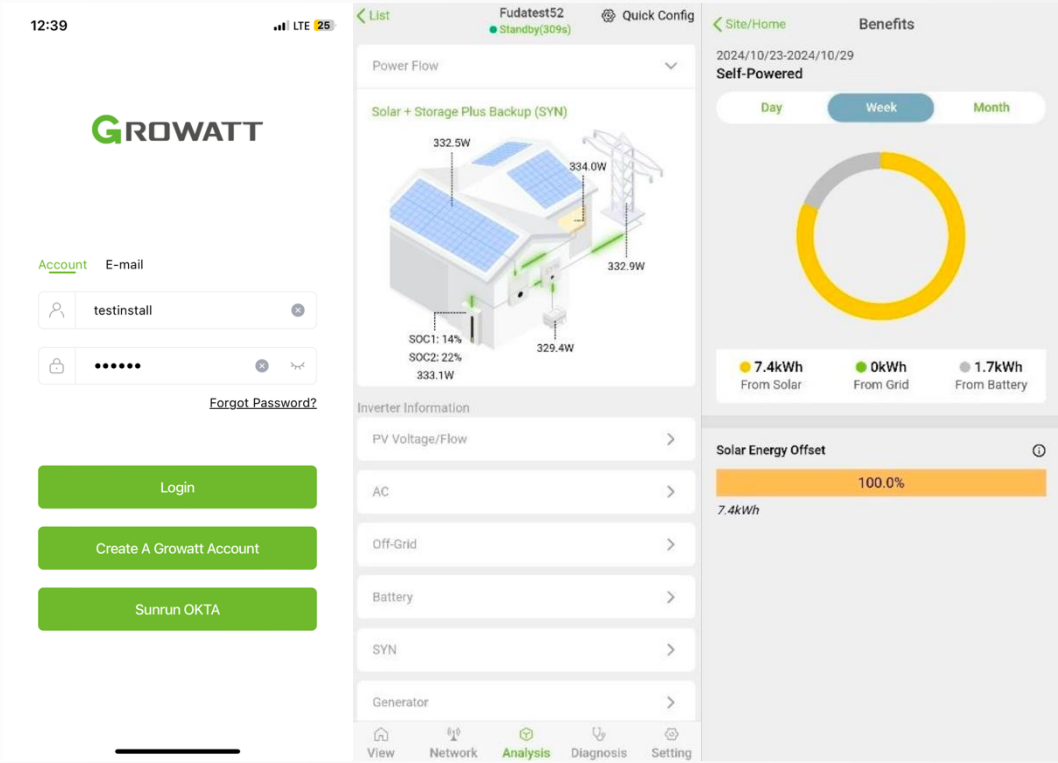
1. Ground Cable
2. Communication Cable
3. Power Cable

APX Battery Modules inbuilt with module-level optimizer SHALL Be externally paralleled together.

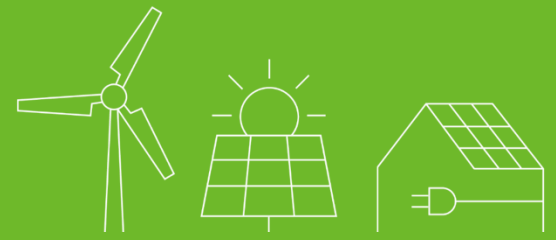
Which means Battery Module+ connect Battery Module+

Battery Module- connect Battery Module-

Note: It is not recommended to install a DC circuit breaker between the battery system and the PCS, If you want to install a DC circuit breaker with rated working voltage greater than 1000V and rated working current greater than 63A, do not operate the DC circuit breaker with power on, otherwise the machine may be damaged.



SHINER APP Commissioning & Settings Guide



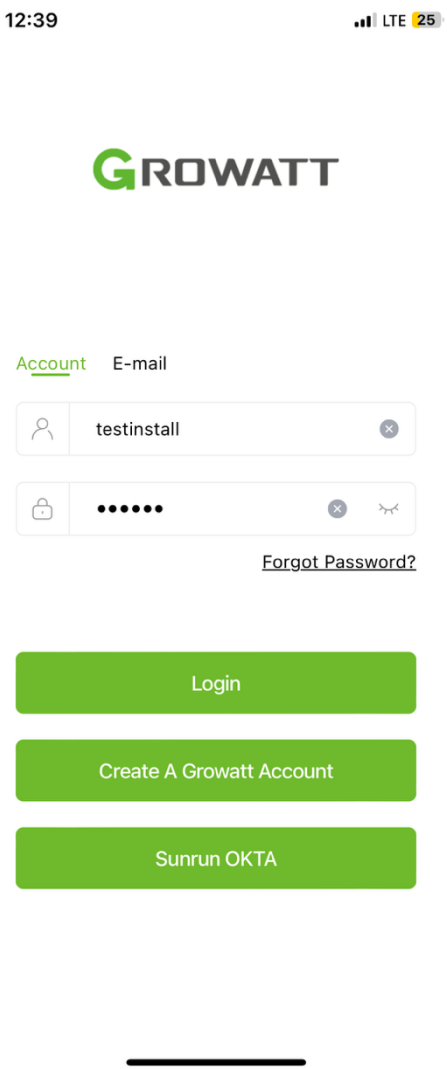
SHENZHEN GROWATT NEW ENERGY CO.,LTD

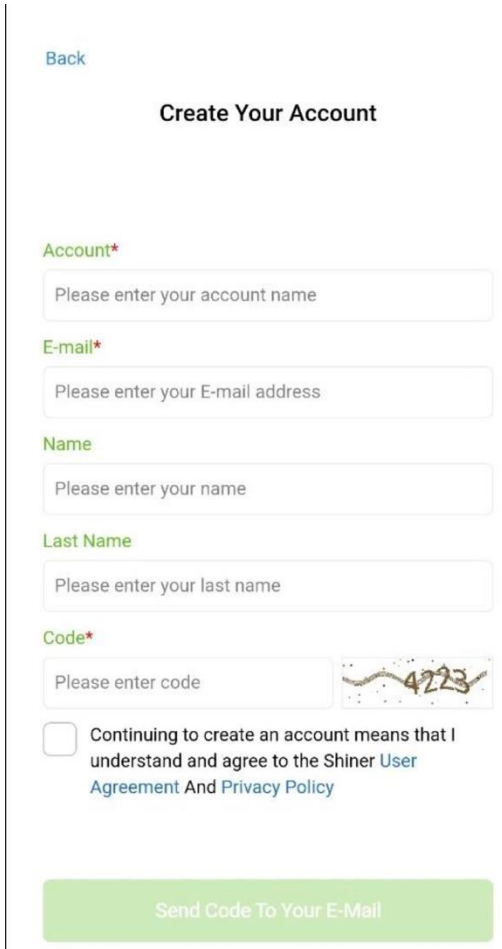
GROWATT

SHINER App Commissioning

Download

- Download “Shiner” from APP Store or Google Play store





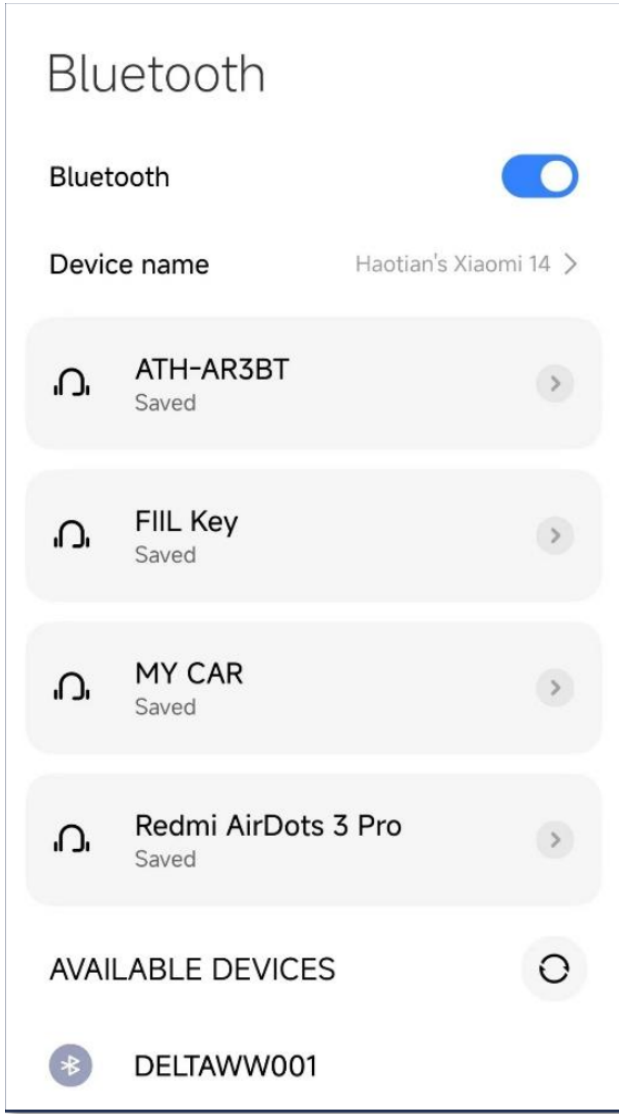
Create an Installer account

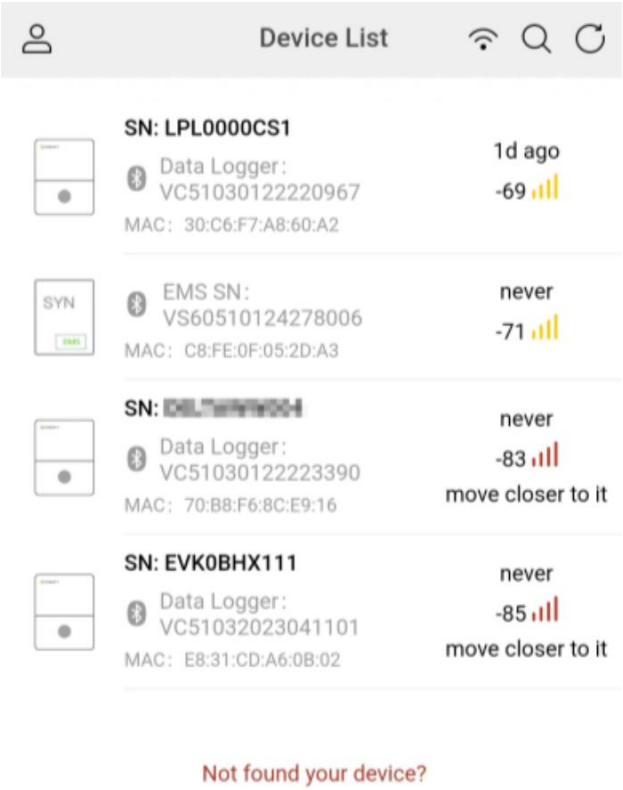
- Distributors can contact their sales representative
- Installers can call customer support line: 1-866 686 0298

SHINER App Commissioning

Connect to the Inverter

- Turn on Bluetooth
- Click the inverter
- Input the CC from the side of the inverter or scan with your camera to connect





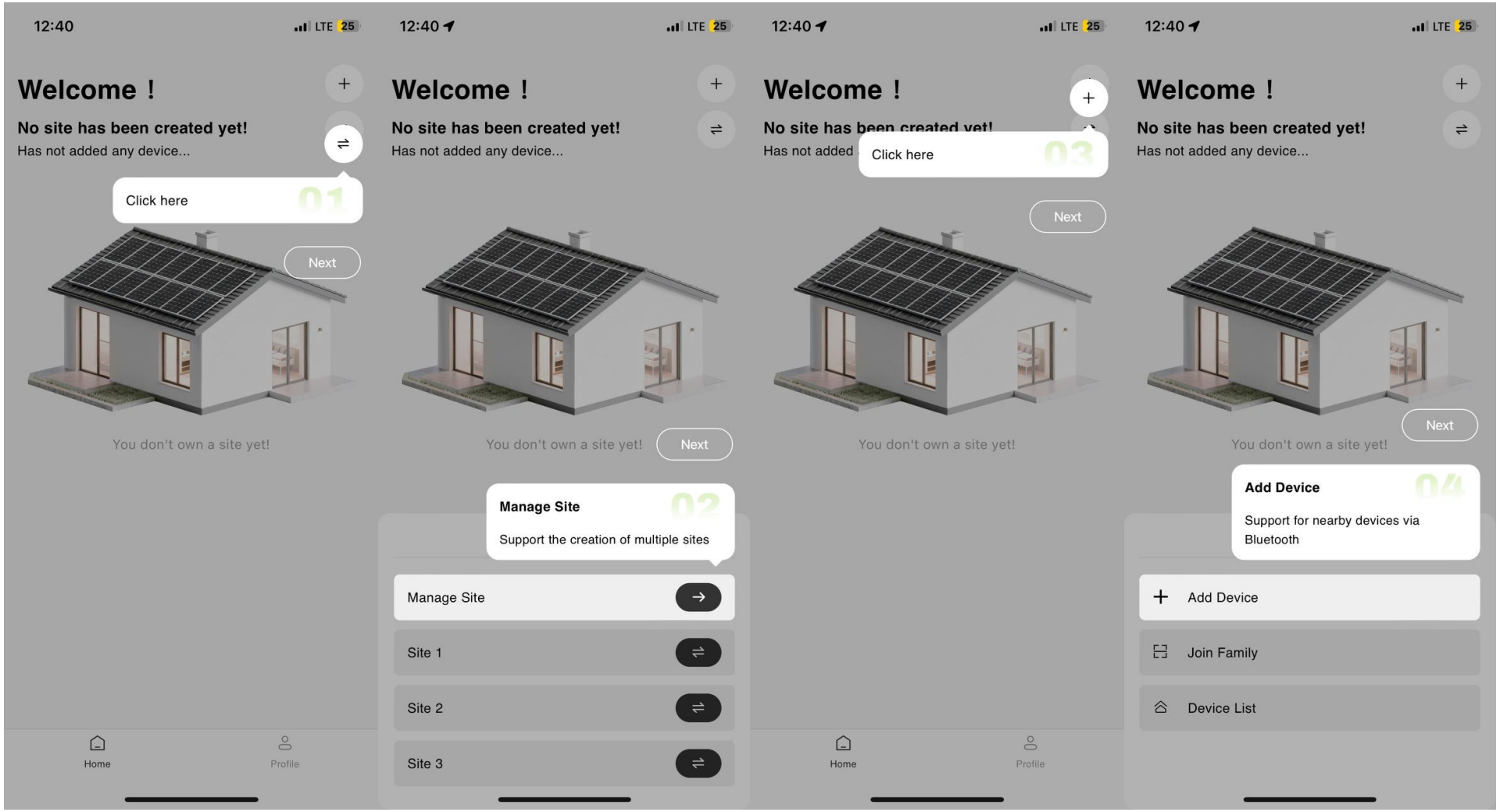
SHINER App Commissioning

Add Site

- Create a new site for each home address

Add Device

- Bind a device to the created site



SHINER App Commissioning

Installer View

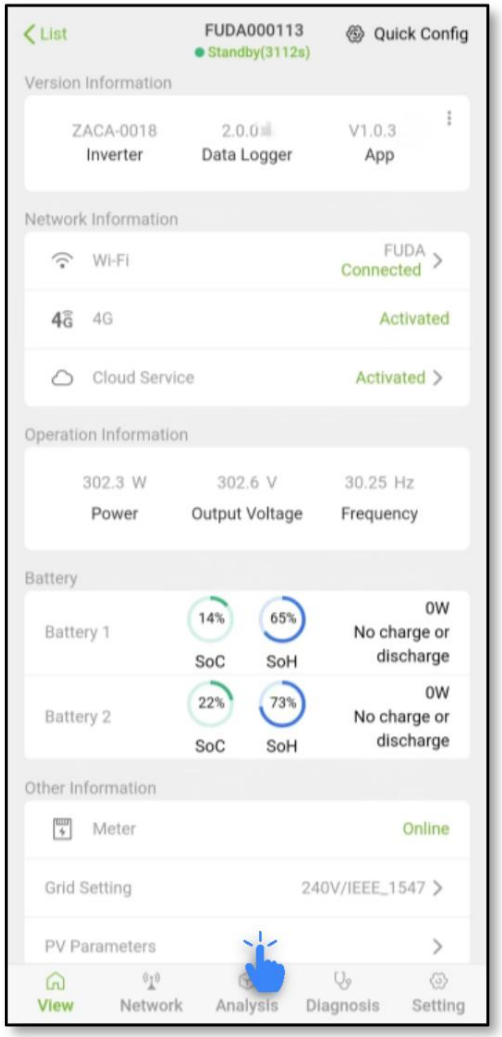
- See current PV production and Battery activity

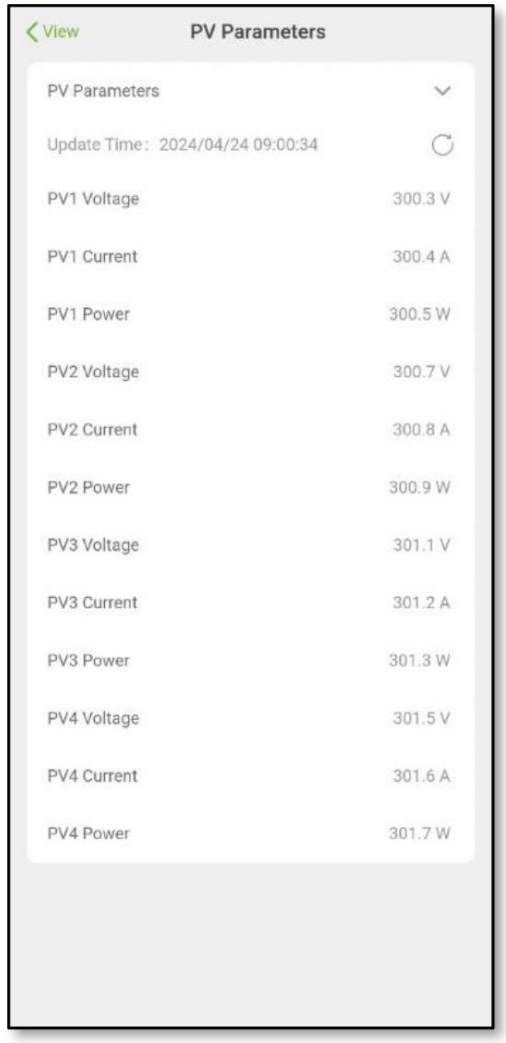
Connect to Network

- Connect to wifi

Check for Firmware Upgrades

- Check for Firmware upgrades





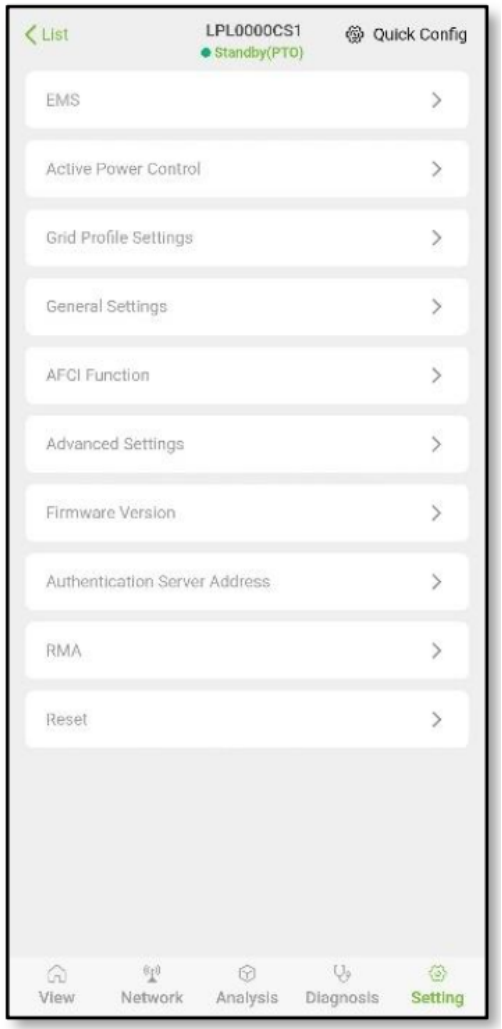
SHINER App Commissioning

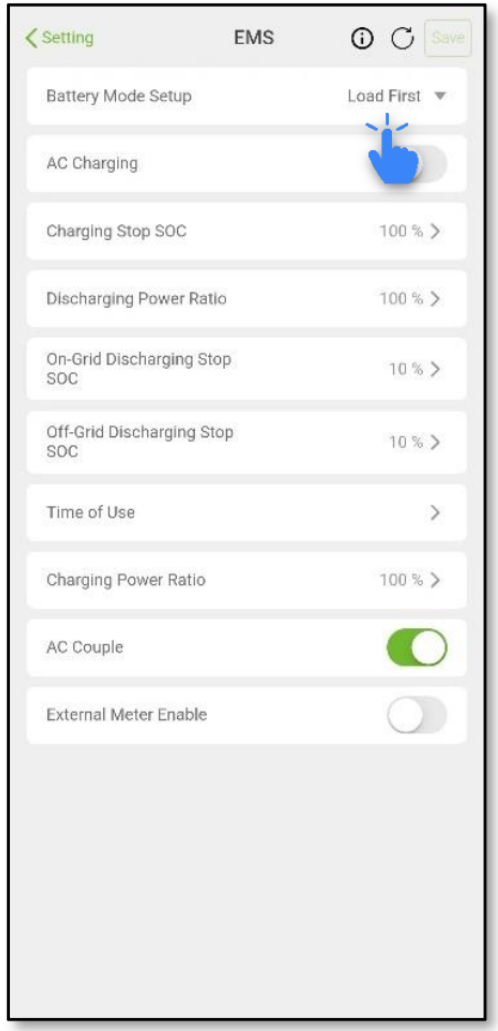
Settings Page

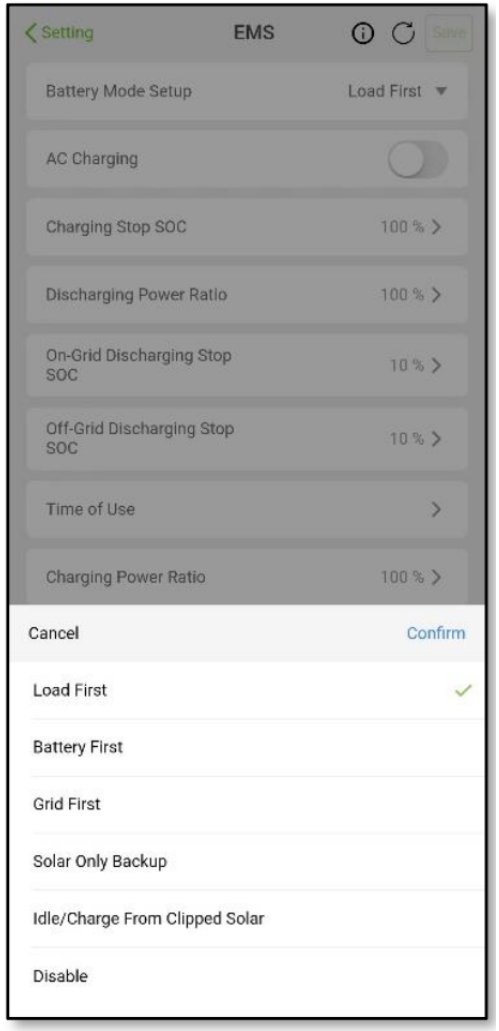
- On the settings or quick settings page you can configure: Grid Code, EMS modes, time of use, and pre PTO mode to finish the commissioning

Export

- When confirmed o be working as expected, installers can export all parameters directly to PDF or JPG to their phone photos or email and share







SHINER App Commissioning

End User Profile

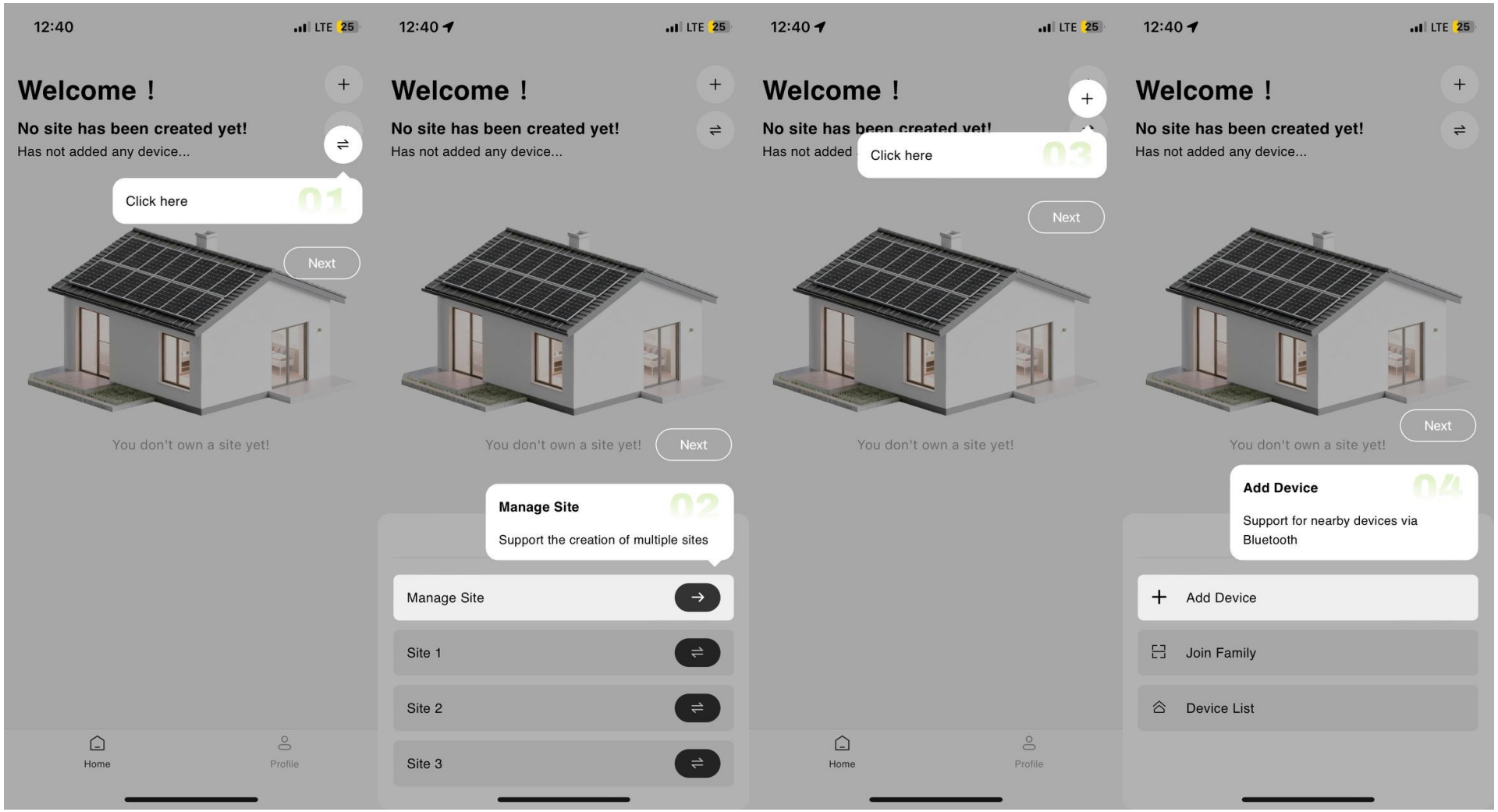
- Residential End users can create an account directly within the Growatt SHINER application, and connect to the inverter.

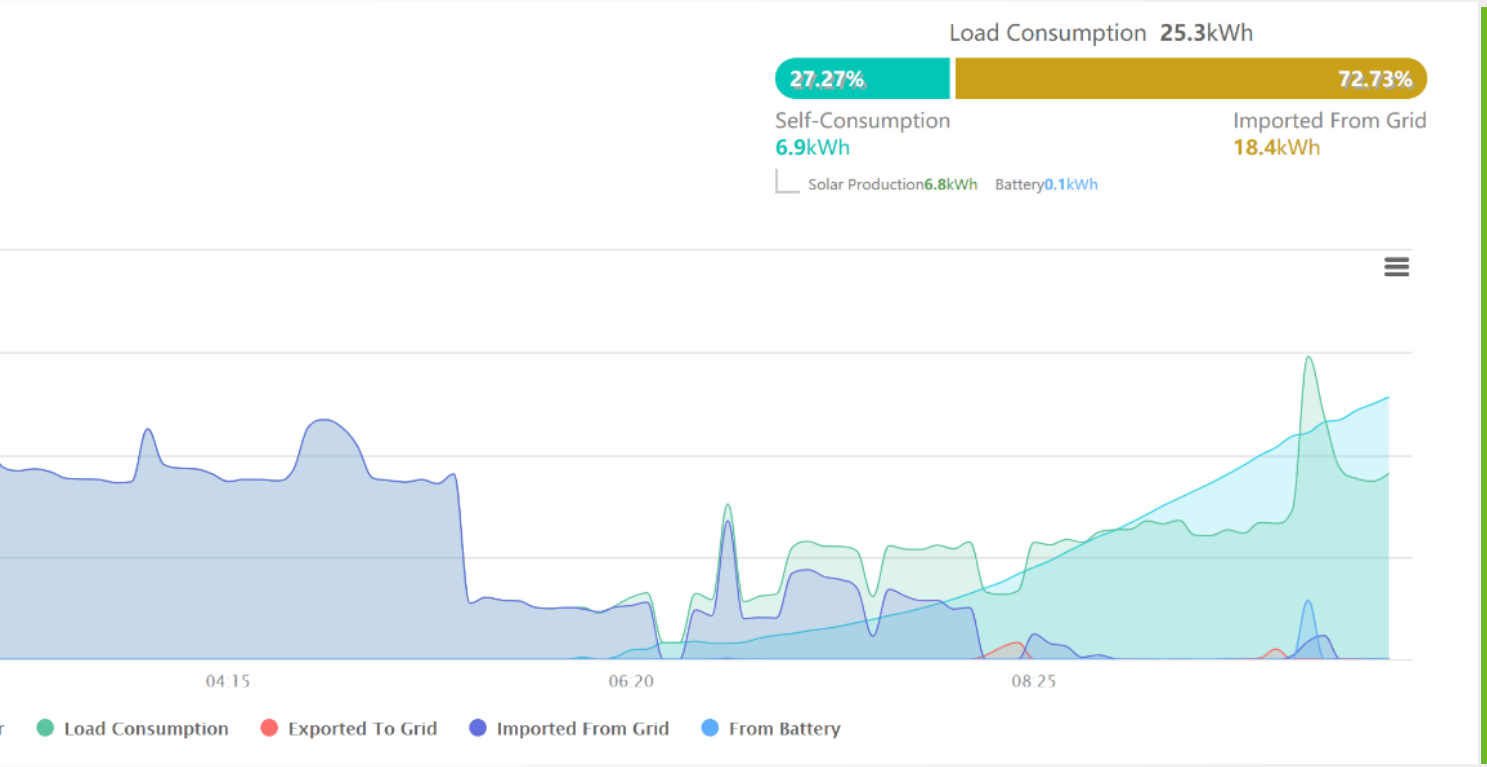
Connecting

- Scan or Input the CC on the side of the device and follow the same process of creating a site, then adding a device

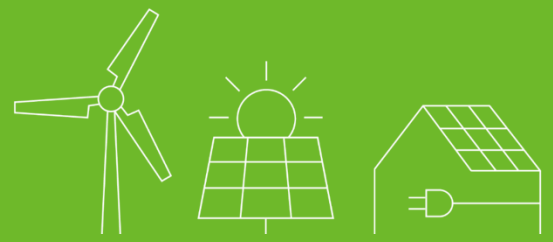
Monitor

- Finally, monitor your device, track self consumption, and energy saved.





SHINER Server Web Interface Installer Portal



SHENZHEN GROWATT NEW ENERGY CO.,LTD

GROWATT

Nabcep CEU all totals (397 slides): ESIP 326m /PVCMS 450m / PVIP 430m / PVIS 410m

SHINER Server Monitoring

Distributor Profile

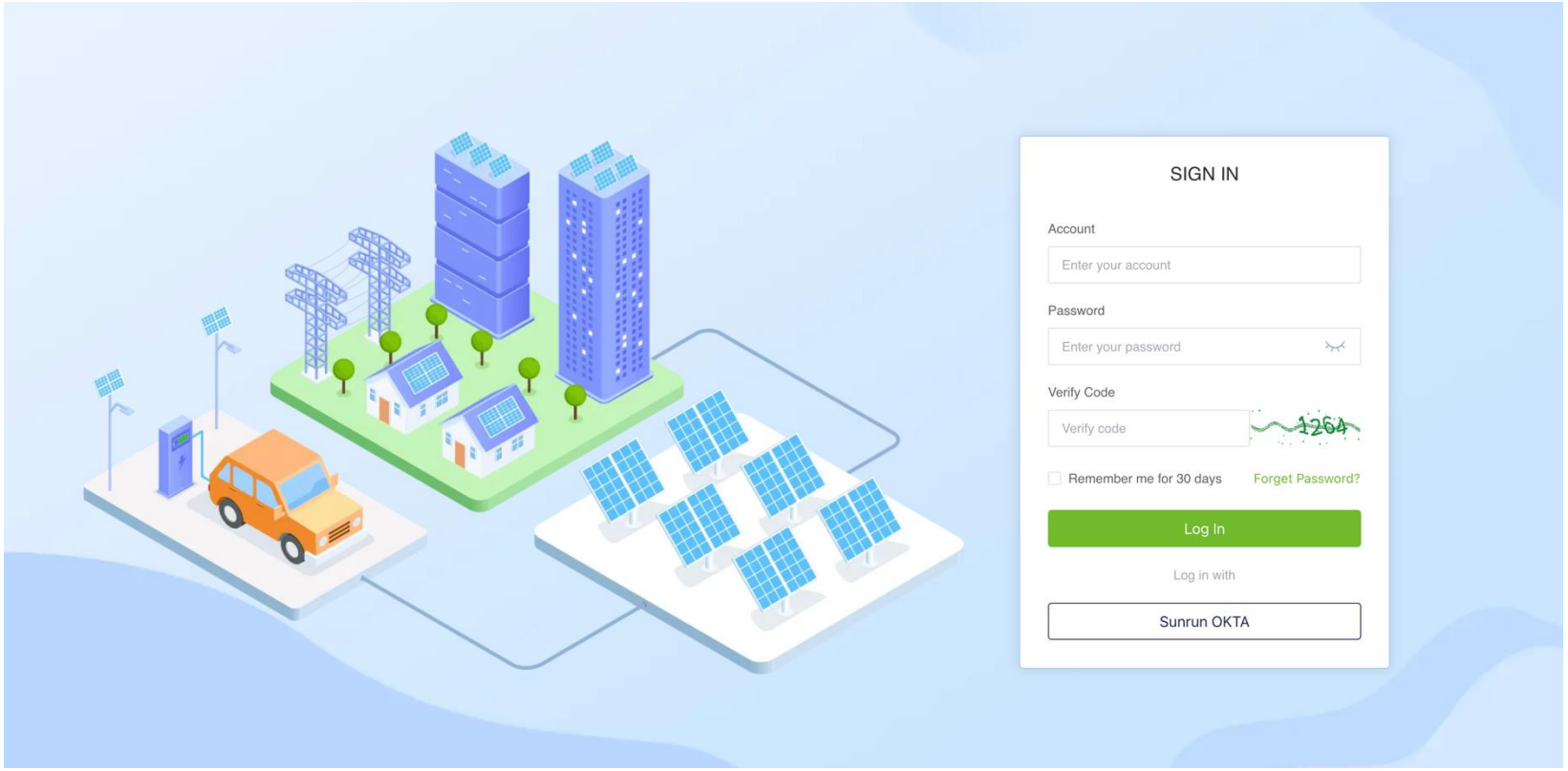
- Shiner server can be accessed at Growatt-US.Vidagrid.com
- Distributor profiles can be created by the Growatt team

Installer Profiles

- Installer profiles can be created by the distributor directly or by calling Growatt support: 1-866-686-0298

End User Profiles

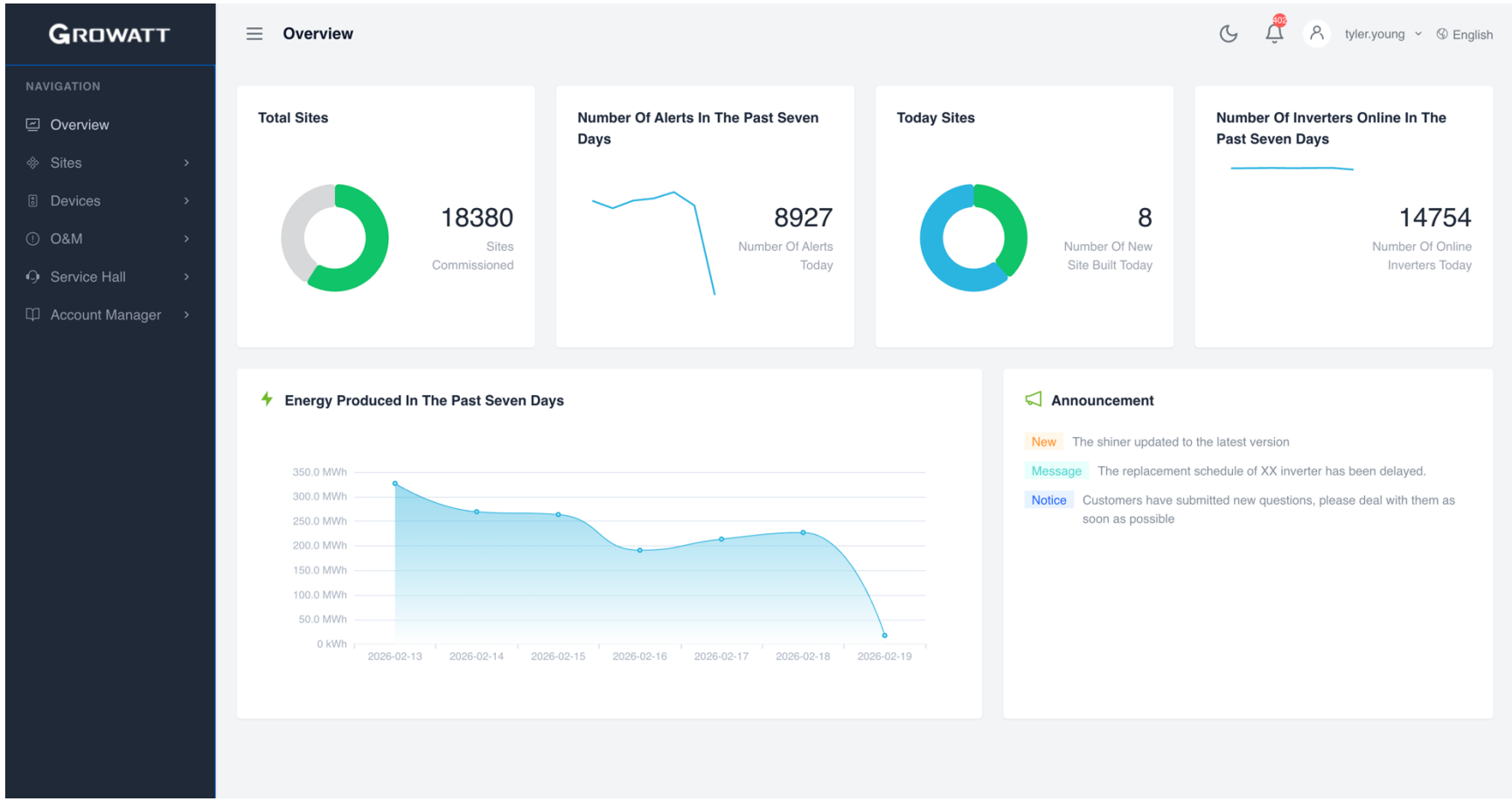
- End user profiles can be created directly within the Growatt Shiner APP or on the Shiner server.



SHINER Server Monitoring

Distributor/Installer Overview

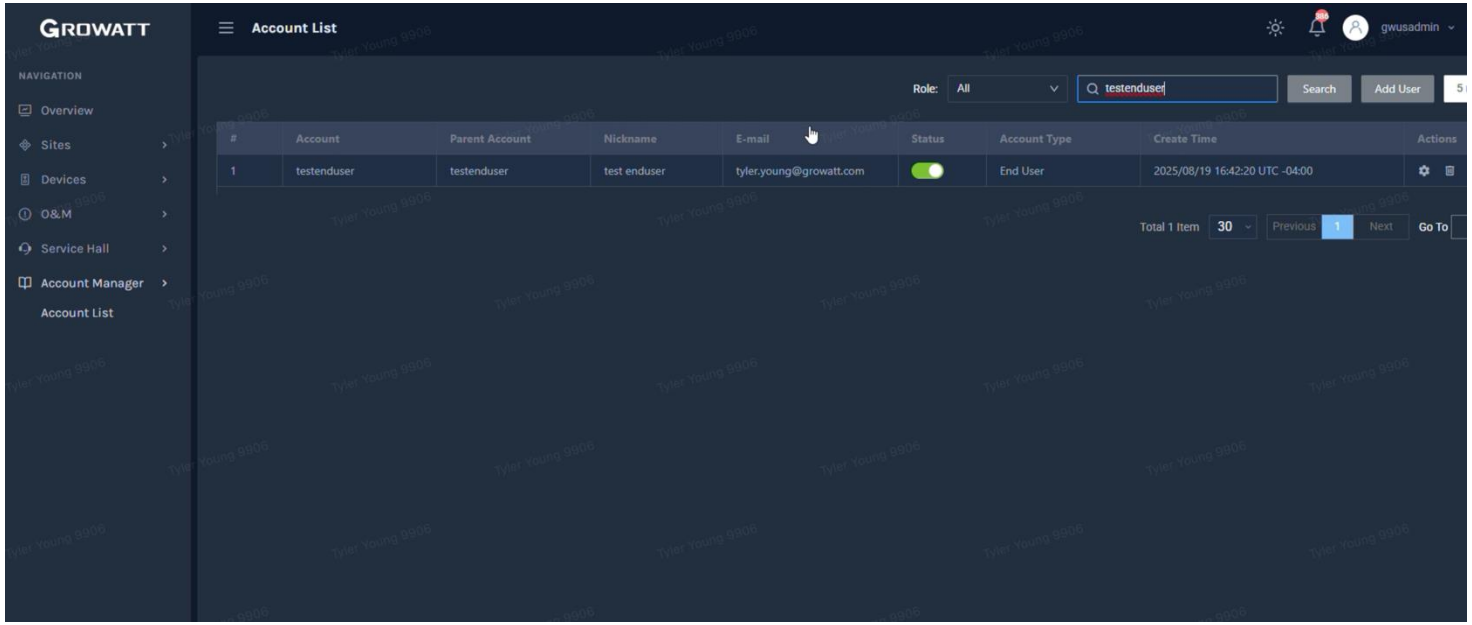
- Overview: See all your sites at once for easy monitoring for abnormalities
- Sites: For seeing all of your previously commissioned sites
- Devices: For seeing all of your individual devices
- O&M: For OTA Firmware upgrades
- Service Hall for Support & RMA's
- Account Manager: For Adding Installers/End Users & Binding devices to sites

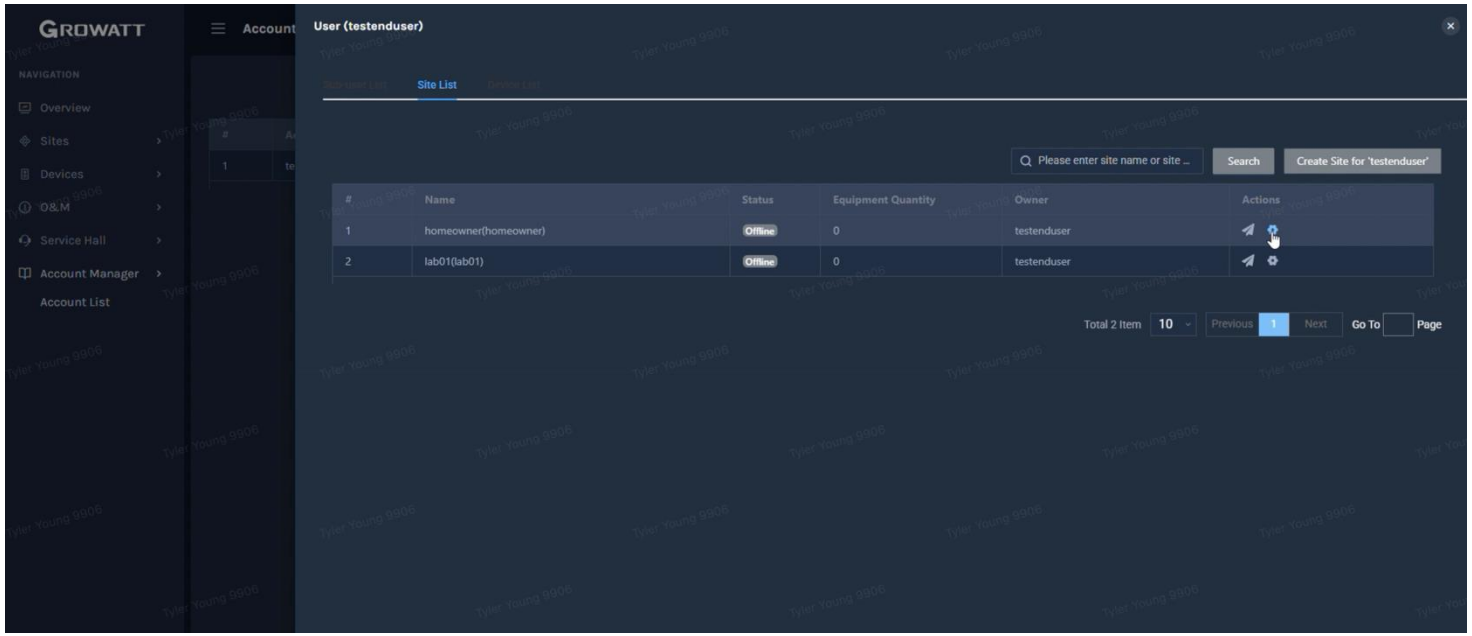


SHINER Server Monitoring

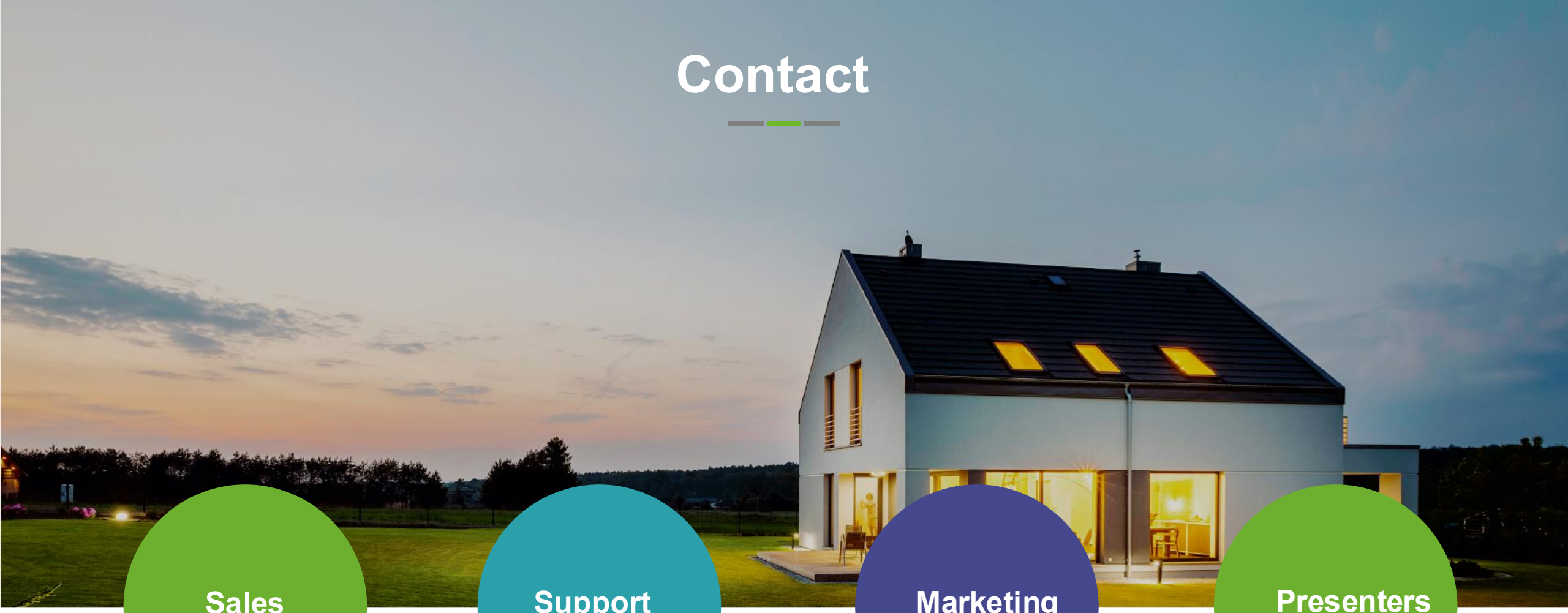
Binding A Device

- Under Account Manager, Select an end user account
- Click “Site List” and create a site, or find the one created by the installer
- On the right hand side, select the “Gear” icon, and type in the Serial Number of the device you’re trying to bind
- Click “Bind” and the device is now bound properly and can be monitored by the end user, installer, and Distributor.





Contact



Sales

1-818-800-9455
Info@growatt.com

Support

usaService@growatt.com
866-868-0298

Marketing

925-818-9906
Tyler.Young@growatt.com

Presenters

Ryan.Gravelle@growatt.com
Fermin.Carillo@growatt.com
Tyler.Young@growatt.com

Q&A

THANKS.

Growatt New Energy