



## Franklin Home Power Quick Installation Guide

Version 1.0

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Please read this document carefully to ensure the best reliability of the product and your warranty eligibility. For further information about warranty, please refer to the **Franklin Home Power Limited Warranty**.

This document is intended for use by professional installation and maintenance service providers only and no statements, information or recommendations in this document constitute any express or implied warranty.



Please read this document carefully before installing or using the Franklin Home Power equipment. Failure to follow any instructions or warnings in this document may result in damage to the equipment, personal electric shock, severe injury, or even death.

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## Product Information

Franklin Home Power (FHP) is composed of aPower, aGate and other electrical components, and this document applies only to the following products: aPower X and aGate X.

FranklinWH Energy Storage Inc. ("FranklinWH") reserves the right to make any improvements to the product, and the contents in this document shall be subject to updates without further notification.

All images and pictures provided in this Manual are only for demonstration purposes and may differ in detail from the product, based on the product version.

## Feedback

If you have any questions or comments, please send us an email at: [service@franklinwh.com](mailto:service@franklinwh.com)

## Disposal of Scrapped Products

Scrapped products (including their internal chemicals and electrical materials) should not be disposed of with household wastes. Please refer to your local laws and regulations regarding disposal.



## Tools



**DANGER:**



Special care must be taken to protect personal safety.

PPE must be worn during transfer and installation.

**WARNING:**



Please use proper protective measures, such as foam or protective cloth, keep aPower X and aGate X well protected from hard objects that may damage their exterior appearance or body during handling and installation.

## Torque Requirements

| Screws and their corresponding torques |                              |                     |
|--|------------------------------|---------------------|
| Screw Type                             | Cross head cross screwdriver | Tightening torque   |
| M4                                     | PH2                          | 1.03lbf·ft (1.4N·M) |
| M5                                     | PH2                          | 2.21lbf·ft (3.0N·M) |
| M6                                     | PH3                          | 4.42lbf·ft (6.0N·M) |

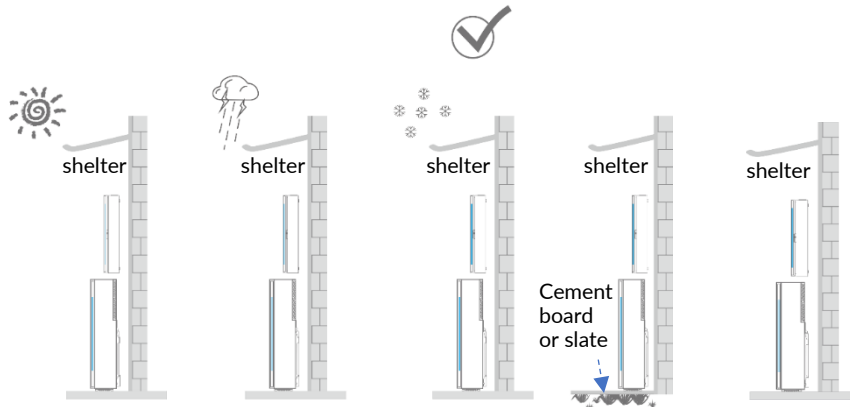
Please refer to the *Franklin Home Power Installation Guide* for more information.

## Installation Requirements

### Installation Environment

The aPower X and aGate X units can be installed indoors or outdoors.

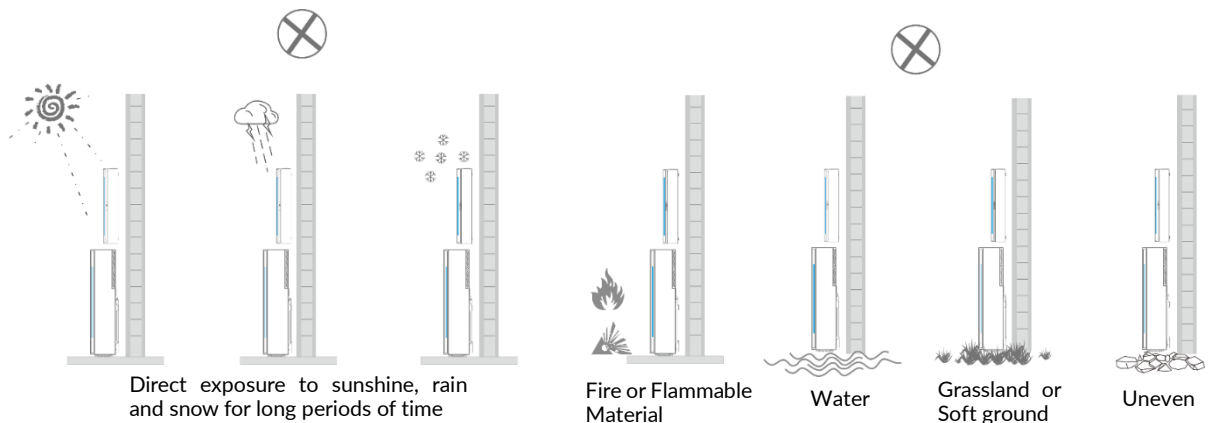
- If it is installed outdoors, it should be in a sheltered location that is protected from direct exposure to sunshine, rain and snow for long periods of time.



- Whether installed indoors or outdoors, the noise factor (< 45dB) must be taken into account when selecting the installation site for each aPower X.

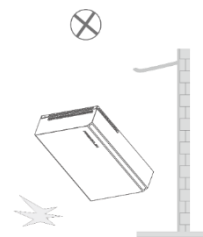
The aPower X and aGate X installation area should be kept dry, cool, and well-ventilated.

The aPower X and aGate X installation area should be protected from access by children and away from any source of heat and/or fire, water, flammable, explosive materials, dust, smoke, uneven, and grassland or soft ground.



**DANGER:**

- Please handle with care.
- Do not use a dropped product or a product that has been subjected to a strong impact force. Otherwise, safety risks (such as cell leakage and electric shock) may arise.



## Installation Method

aPower X supports floor-mounted installation and wall-mounted installation. A mounting bracket is required to hold the equipment to the wall.

aGate X may be wall mounted or embedded in the wall.

## Installation Space

- aGate X:

There should be a minimum clearance of 5D (D is the outer diameter of electrical conduits) from the aGate X bottom to the floor and from the top of the aGate X to the ceiling. The recommended distance between the bottom of the aGate X and the ground is 48 in. (1.22m) and should not exceed 64 in. (1.63m). The maximum distance between the power switch button on the aGate X and the ground shall not exceed 90 in. (2.29m). Please finalize the installation height in accordance with the specific site conditions.

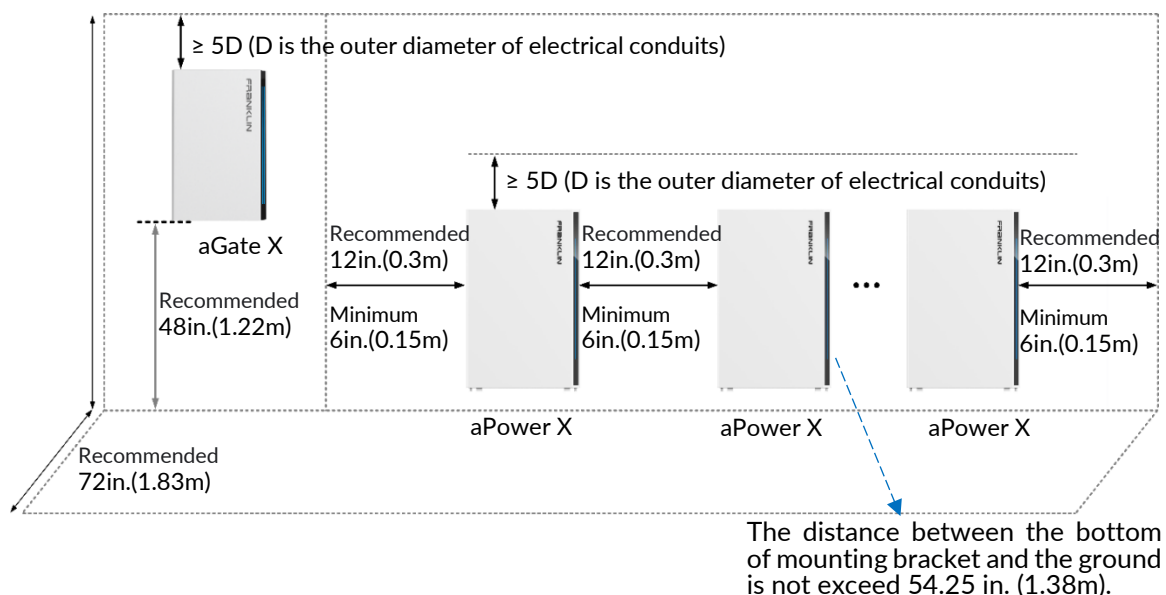
- aPower X:

There should be a minimum clearance of 5D (D is the outer diameter of electrical conduits) from the top of aPower X to the ceiling.

When the aPower X is mounted on the wall, the recommended distance between the bottom of mounting bracket and the ground is 19.7 in. (0.5m), but not exceed 54.25 in. (1.38m). The maximum distance between the switch button on the aPower X and the ground shall not exceed 90 in. (2.29m).

The recommended distance between multiple aPower X units is 12 in. (0.3m), with a minimum of at least 6 in. (0.15m).

- The recommended space distance in front of the wall in the installation area is 72 in.(1.83m).



- Maximum allowable cable length between data exchange devices.

| Data interchange equipment | Maximum cable length |
|----------------------------|----------------------|
| aPower X and aGate X       | 98.4ft (30m)         |
| aGate X to Generator       | 98.4ft (30m)         |
| aGate X to Router          | 328.1ft (100m)       |
| External CT                | 16.4ft (5m)          |

**DANGER:**

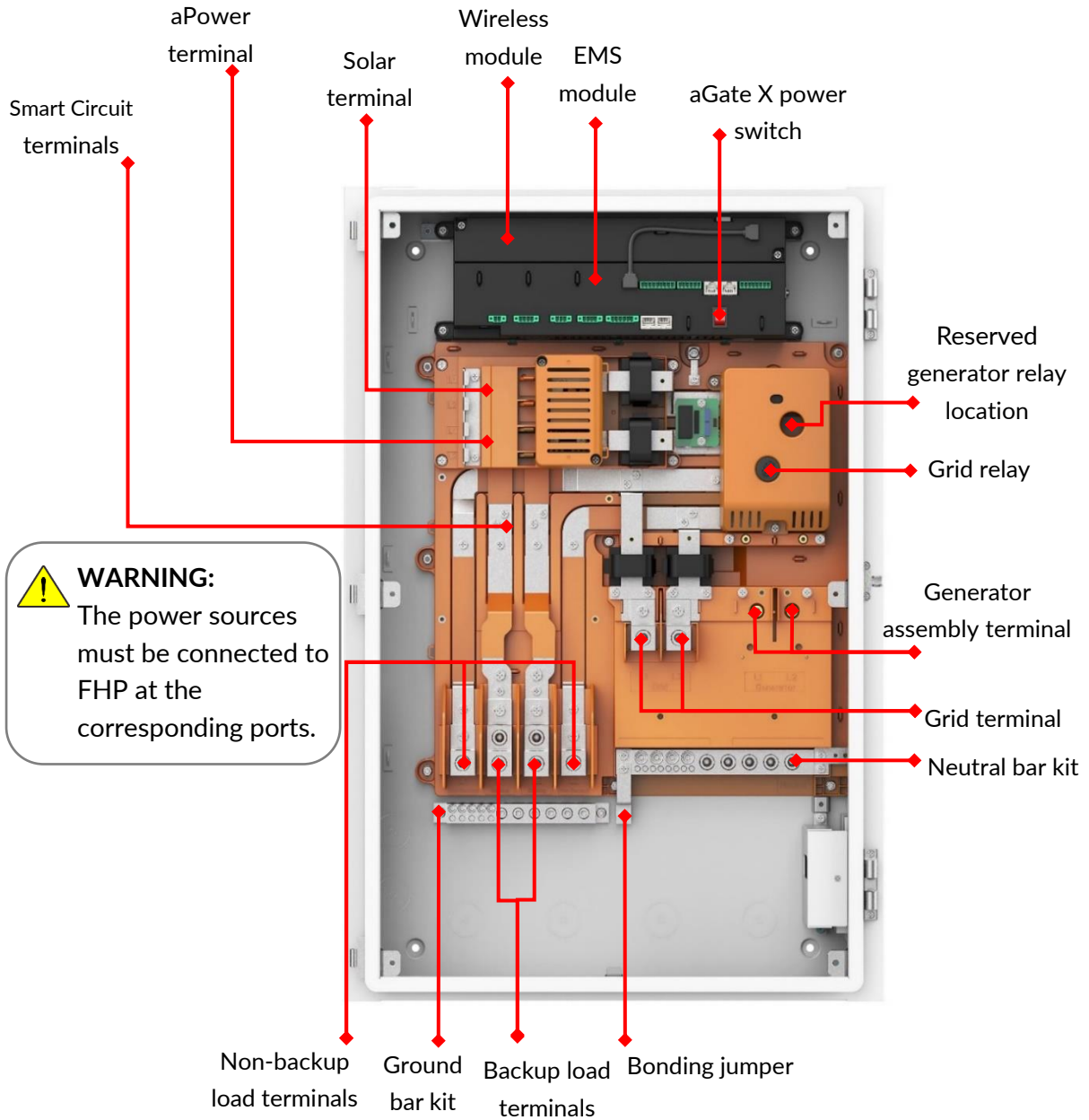
Avoid drilling holes in the water pipes and cables buried in the wall.

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**WARNING:**

- Cover the aPower X top heat dissipation hole to protect from gravel dust during drilling.
  - Final installation method and spacing to comply with licensed Structural Engineering Design wherever required.
  - Must comply with all local codes and standards.
-

# Introduction to the aGate X



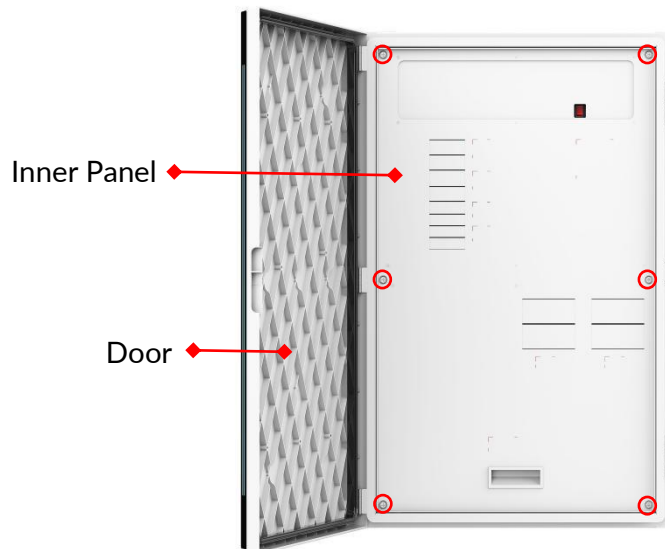
| Name                | Max Current |
|---------------------|-------------|
| Solar terminal      | 80A         |
| aPower terminal     | 100A        |
| Smart Circuits 1, 2 | 50A         |
| Smart Circuit 3     | 80A         |
| Grid terminal       | 200A        |

| Name                      | Max Current |
|---------------------------|-------------|
| Generator terminal        | 200A        |
| Busbars                   | 280A        |
| Non-backup load terminals | 160A        |
| Backup load terminals     | 160A        |
| Combiner box breakers     | 30A         |

## Remove the Inner Panel and Door from the aGate X

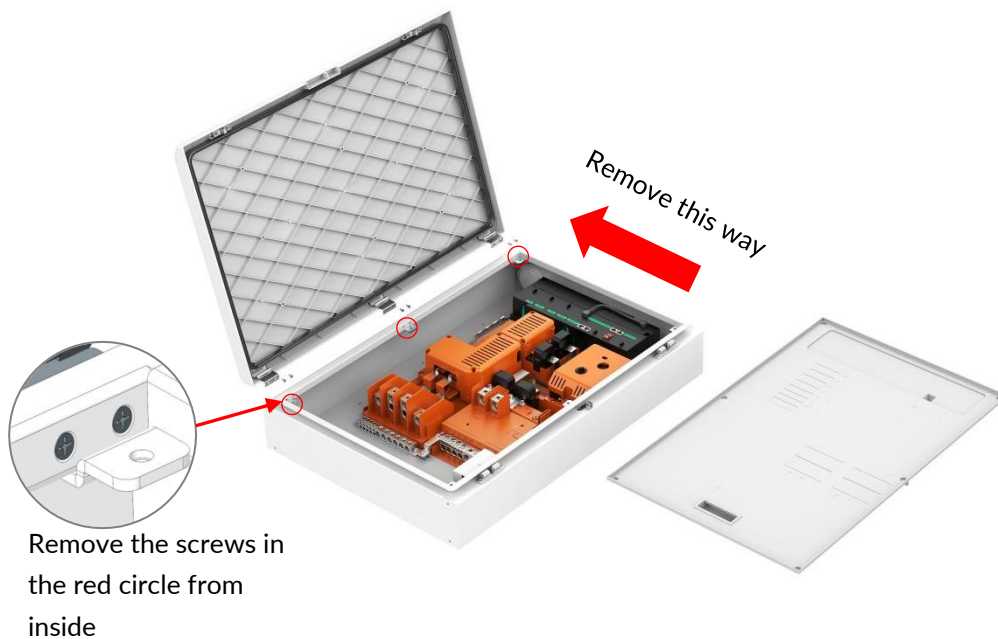
- Remove the Inner Panel

Use a #3X4" Phillips head screwdriver or an electric screwdriver with a Phillips head cross screw bit. Turn the 6 combination screws fastening the inner panel counterclockwise to remove the screws. Remove the aGate X inner panel and properly store it.



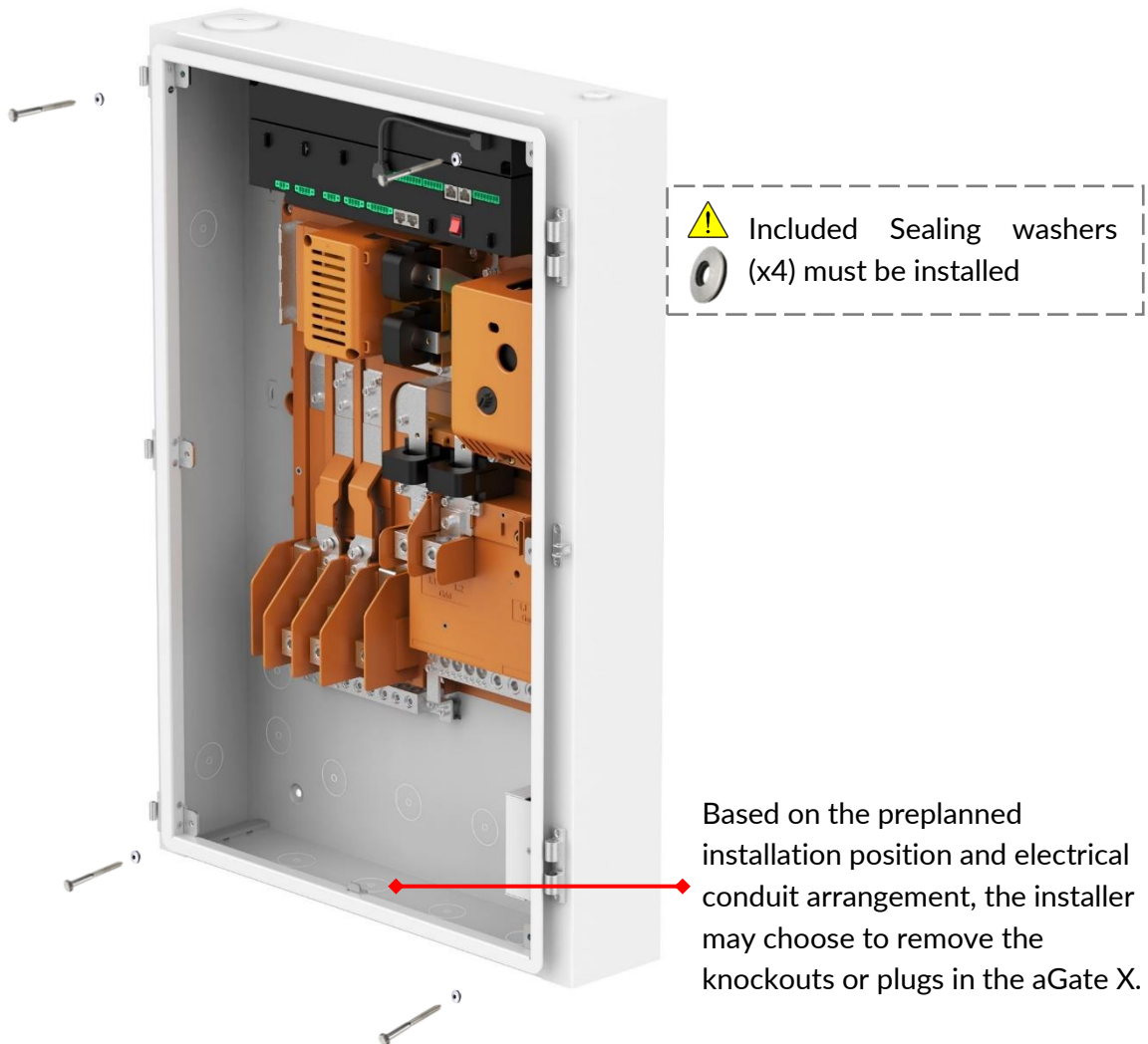
- Remove the Door

Use a #2X4" Phillips head screwdriver. Turn the 6 countersunk screws fastening the hinges on the aGate X door counterclockwise to remove the screws. Remove the aGate X door and properly store it.





## Mount the aGate X on a Wall

**DANGER:**

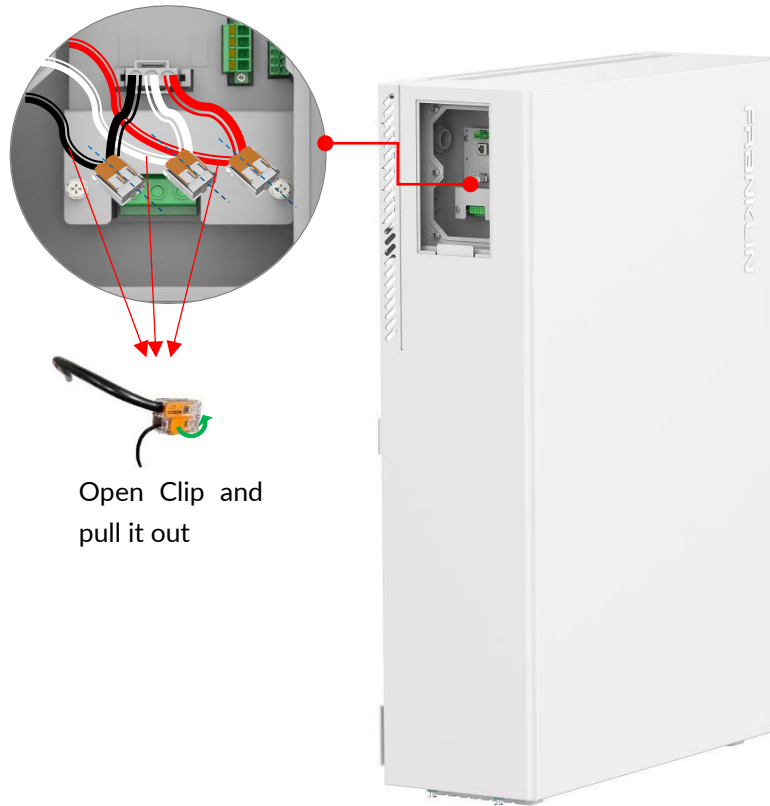
Avoid drilling holes in the water pipes and cables buried in the wall.

**WARNING:**

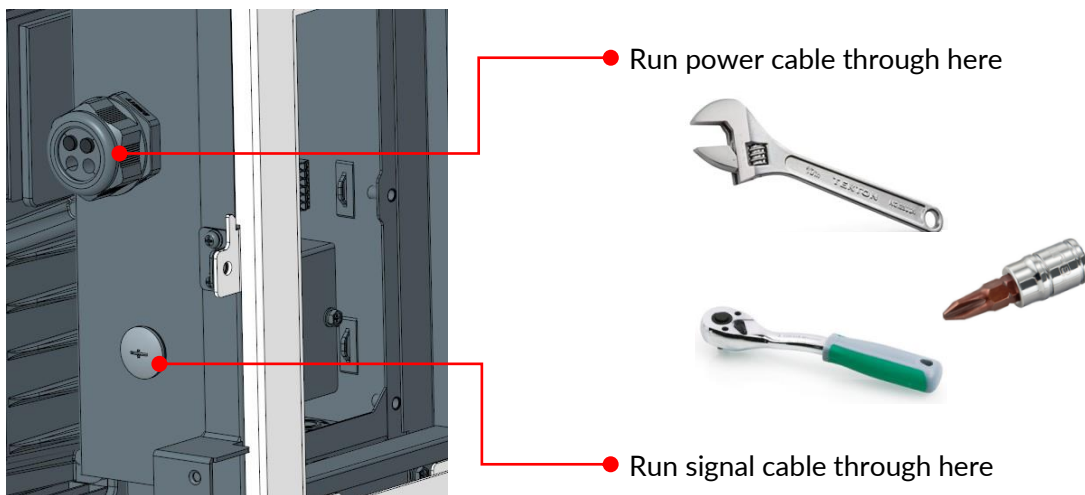
Cover the aPower X top heat dissipation hole to protect from gravel dust during drilling.

### Remove some aPower X accessories

- Open the aPower X wiring compartment cover, and remove the 3 external cables.



- Remove the water-proof lock using an adjustable wrench (turn the lock nut counterclockwise until the lock is removed).
- If a signal cable hole is needed, remove the lower plug.



**WARNING:**

Connect cables in accordance with local installation laws and regulations.

### Installing the aPower X

When installing the bracket, each bolt needs to add an M6 spacer.

**DANGER:** Avoid drilling holes in the water pipes and cables buried in the wall.

**WARNING:** Cover the aPower X top heat dissipation hole to protect from gravel dust during drilling.

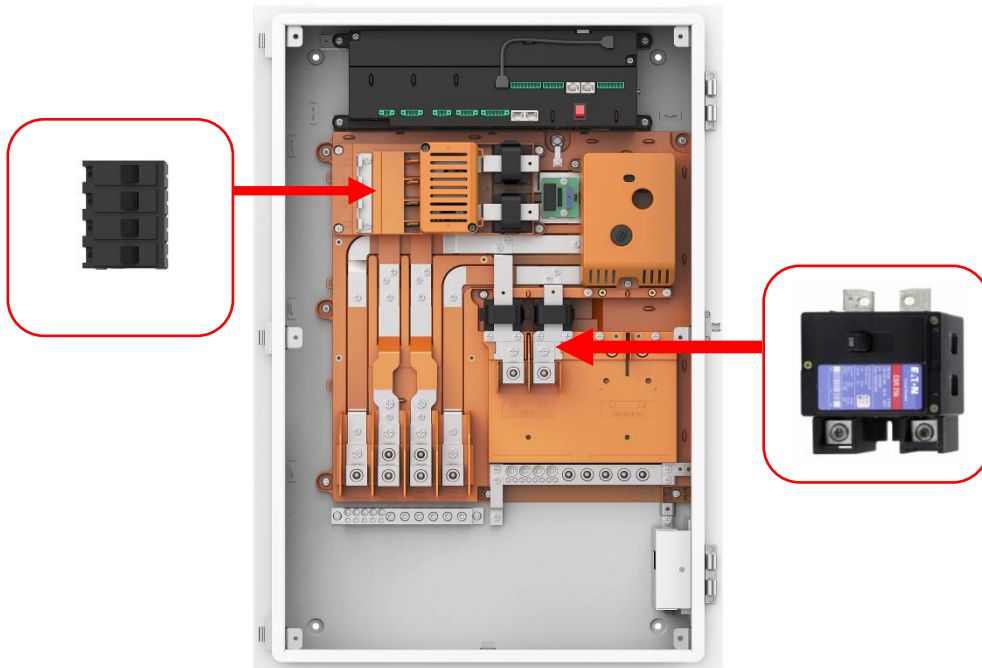
### Special Wall/Baseboard Installation

| Case 1: Concave Baseboard  | Case 2: Protruding Baseboard  | Case 3: Uneven Wall  |
|--|---|--|
|  |   |  |
| <p><b>Solution</b><br/>                     Method ①. Use wooden or steel spacers at the recessed part of the baseboard (to keep it flush with the wall).<br/>                     Method ②. Fix the bracket using 6 bolts at the recommended positions, as shown in the figure.</p> | <p><b>Solution</b><br/>                     Use steel spacers (to the same thickness of the baseboard) for the upper part of the bracket.</p> | <p><b>Solution</b><br/>                     Use plywood or gypsum board to level the wall. The recommended thickness is 0.5in.</p> |
|  |   |  |

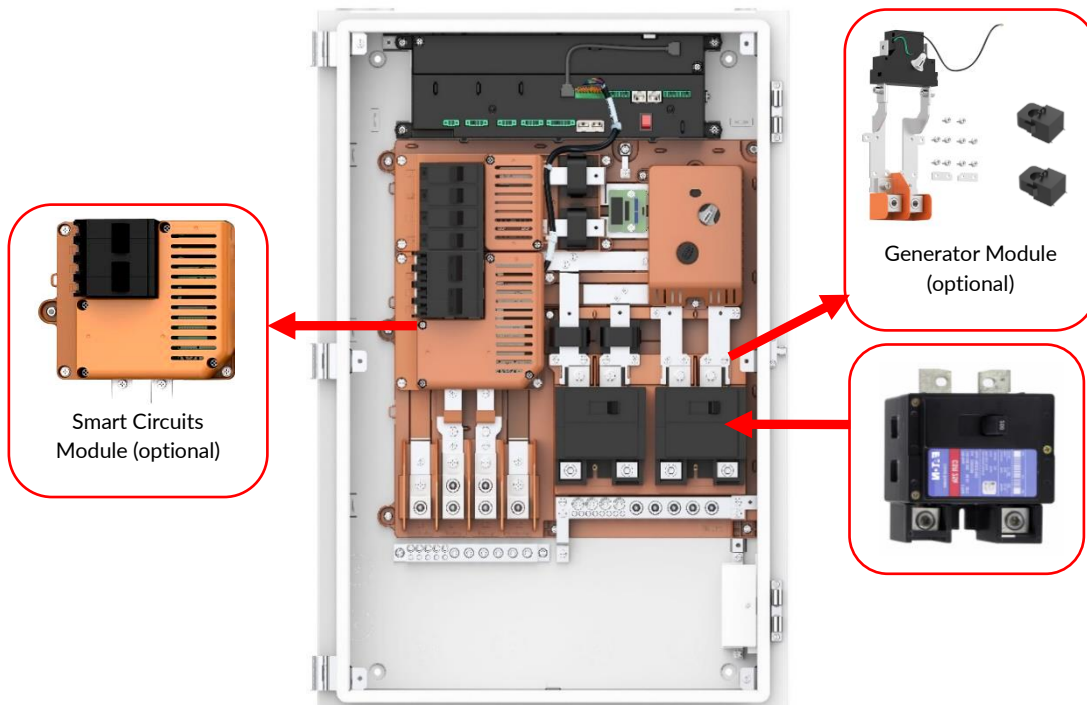
**\*NOTE:** These wooden or steel materials are prepared by the installer.

## Breaker and Optional Parts

- Standard configuration

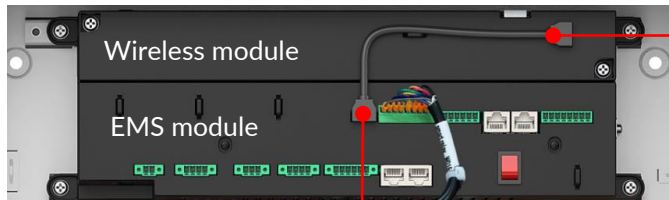


- Full configuration



## Communications Wiring

- Connect a **Com Kit (4G & Wifi)** cable to **Activate** the aGate X commissioning functions.



**WARNING:** Use only the USB cable supplied with the equipment. The aGate X cannot be activated if this step is not completed.

- Communications Cable Preparation

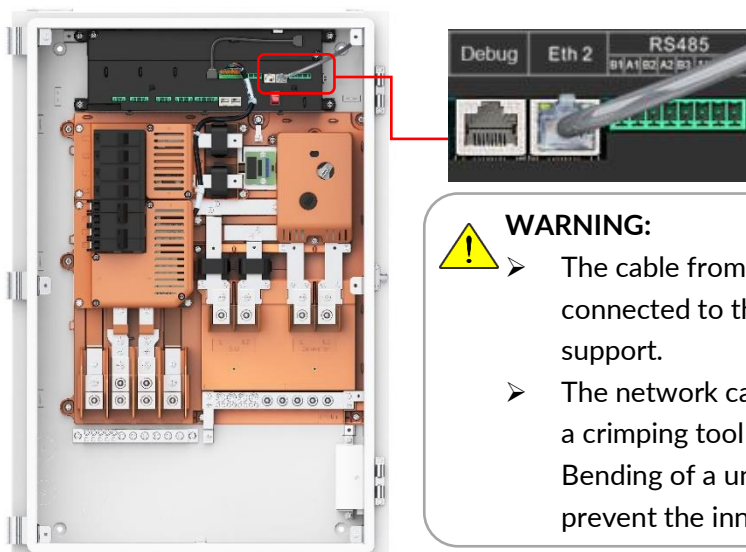


- ① Remove the insulation jacket from the cable.
- ② Fan the wires in the order of **568B (white/orange, solid orange, white/green, solid blue, white/blue, solid green, white/brown, solid brown)**. Insert the wires into the connector.
- ③ Crimp the connector using a crimping tool.

**WARNING:** Before connecting the assembled cable, use a network cable tester to ensure that the cable is working correctly. **When testing, the cable must be disconnected from the device.**

- Connect the aGate X to the network for remote access to the FHP

To ensure the reliability of remote communications, it is recommended to insert the home network cable with an internet connection into the **Eth2** port of the EMS module, in order to enable the remote communications function.



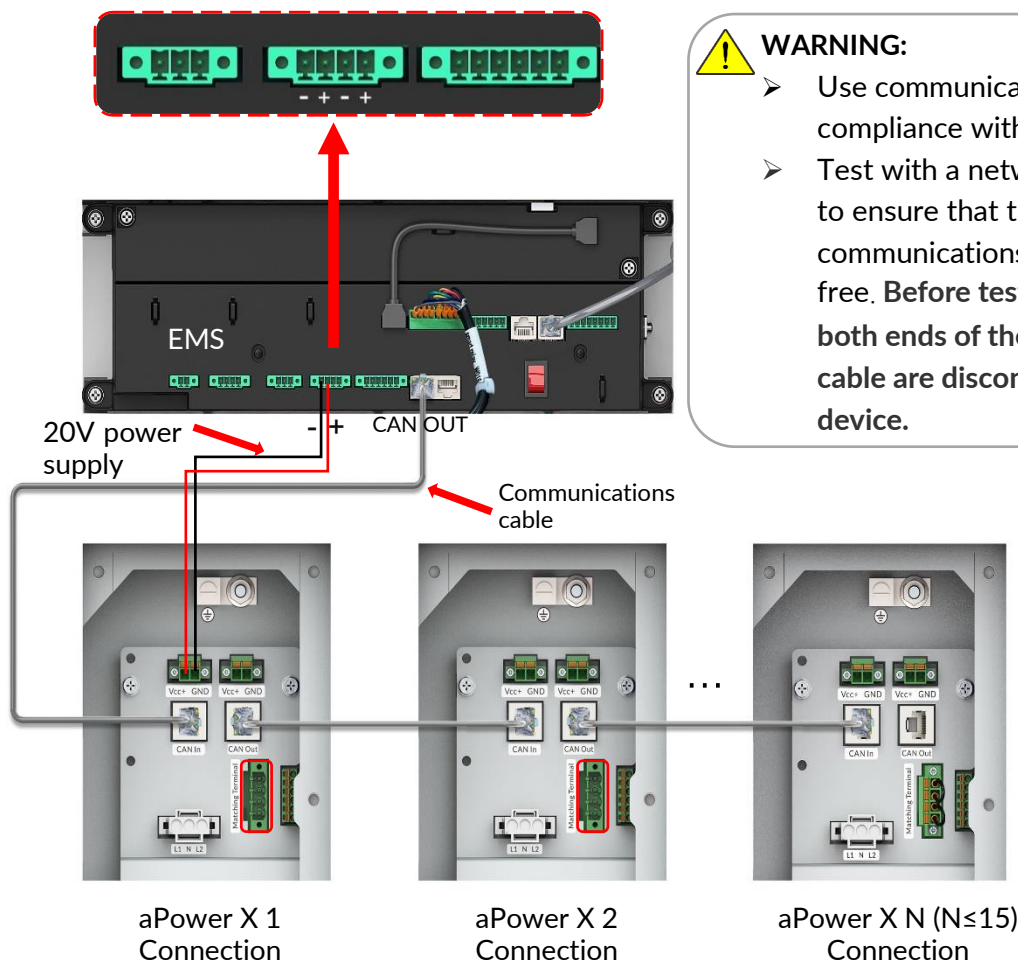
**WARNING:**

- The cable from the household network may only be connected to the Eth2 port, as Eth1 port is used for support.
- The network cable needs to be made on site using a crimping tool according to the 568B standard. Bending of a unibody cable inside the aGate X may prevent the inner cover from closing.

- Communications connection between the aGate X and the aPower X

When the length of the communications cable between the aGate X and the aPower X is less than 98ft (30m), a communications cable can be used to connect.

Both the communications cable connection and 20V power supply must be used in conjunction when the communications cable length between aGate X and aPower X is longer than 98ft (30m).



**WARNING:**

- Use communications cables in compliance with 568B.
- Test with a network cable tester to ensure that the communications cable is error-free. Before testing, ensure that both ends of the communication cable are disconnected from the device.

**WARNING:**

When more than one aPower X unit work in parallel mode, it is necessary to remove the excess matching terminals from all aPower X units along the loop except for the matching terminal on the last aPower X.

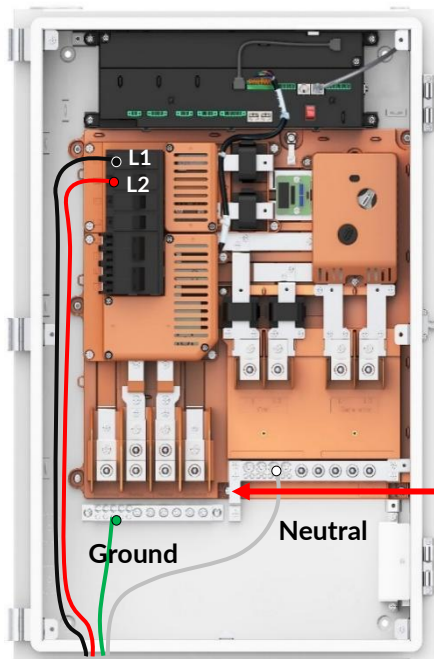
**NOTE:**

- If the communications cable shares the same conduit with power wires, please use a Type 600V TC insulated communication cables (with metal connectors).
- When the system needs to be connected to the 20V power supply, the terminal does not need to be removed. Just press the orange switch of the port, insert the prepared wire, and then release the switch to complete the wiring.

Vcc+ GND

### Power Wiring Diagram

- Solar Inverter Connections to the aGate X



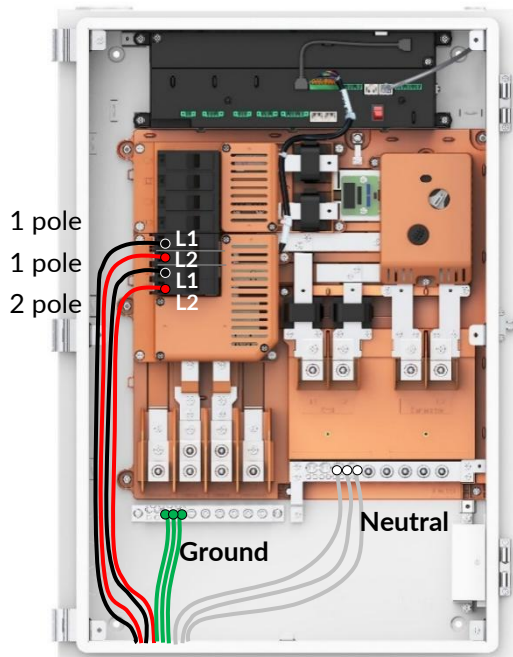
- L1
- L2
- Neutral
- Ground

**WARNING:**

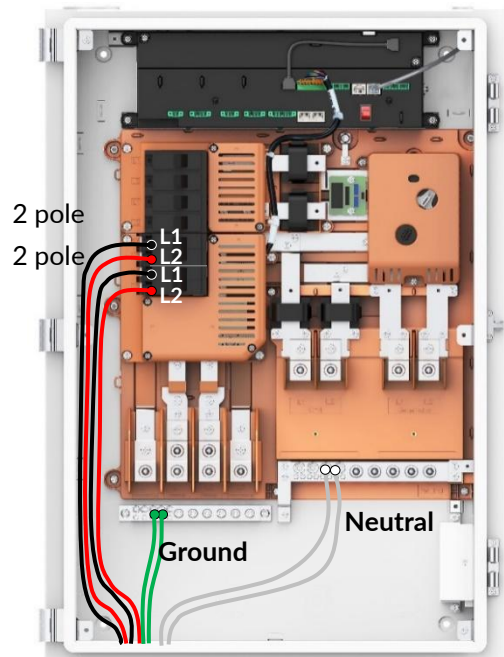
- The solar circuit breaker is the only interface for the solar inverter to be connected to the aGate X.
- The aGate X has a built-in solar CT.

According to NFPA 70-250 Grounding and Bonding Part V, when installed as service equipment, the neutral and ground should be bonded together as shown in the picture on the left. The Neutral-Ground Bonding Jumper must only be removed if not installed as service equipment or for test purposes.

- Smart Circuit Connections to the aGate X (Optional)

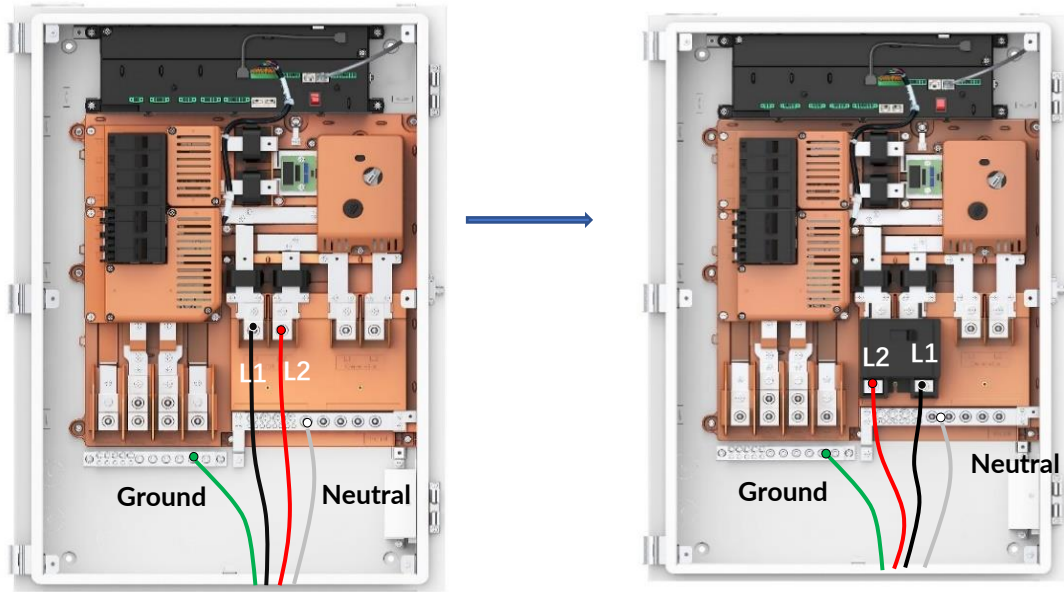


or

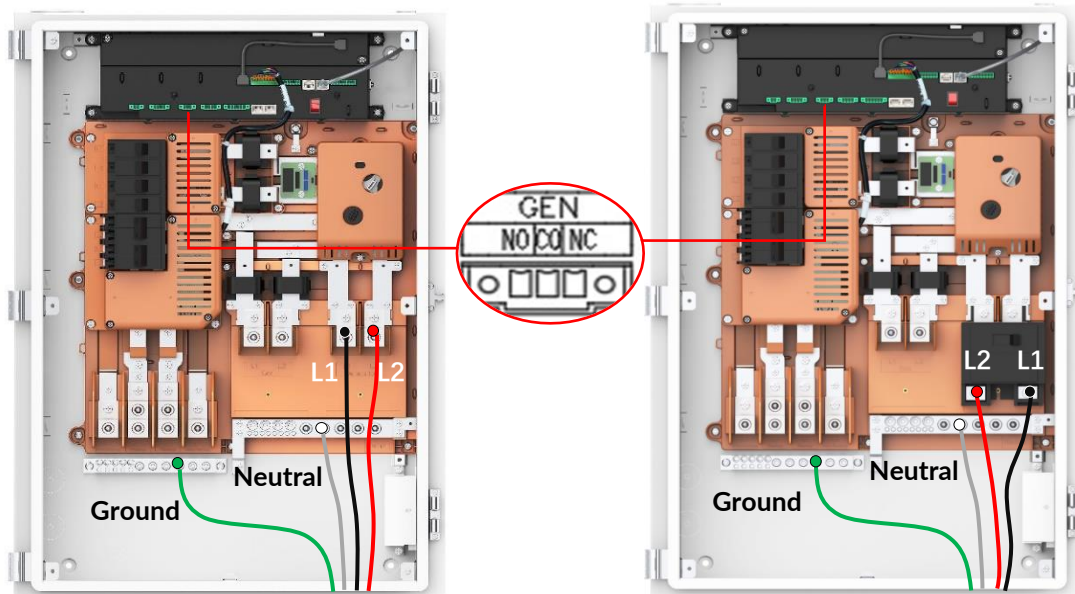


**NOTE:** All breakers are to be provided by installer or customer.

- The Grid AC Power Connections to the aGate X (Optional)



- Generator Power Connections to the aGate X (Optional)



**DANGER:**



After installation of the grid breaker and generator breaker, L1 and L2 will swap sides for connections (L2 is located to the left while L1 is to the right).

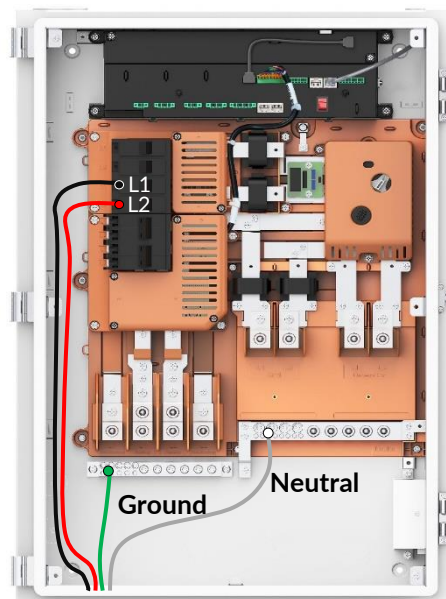
**NOTE:**



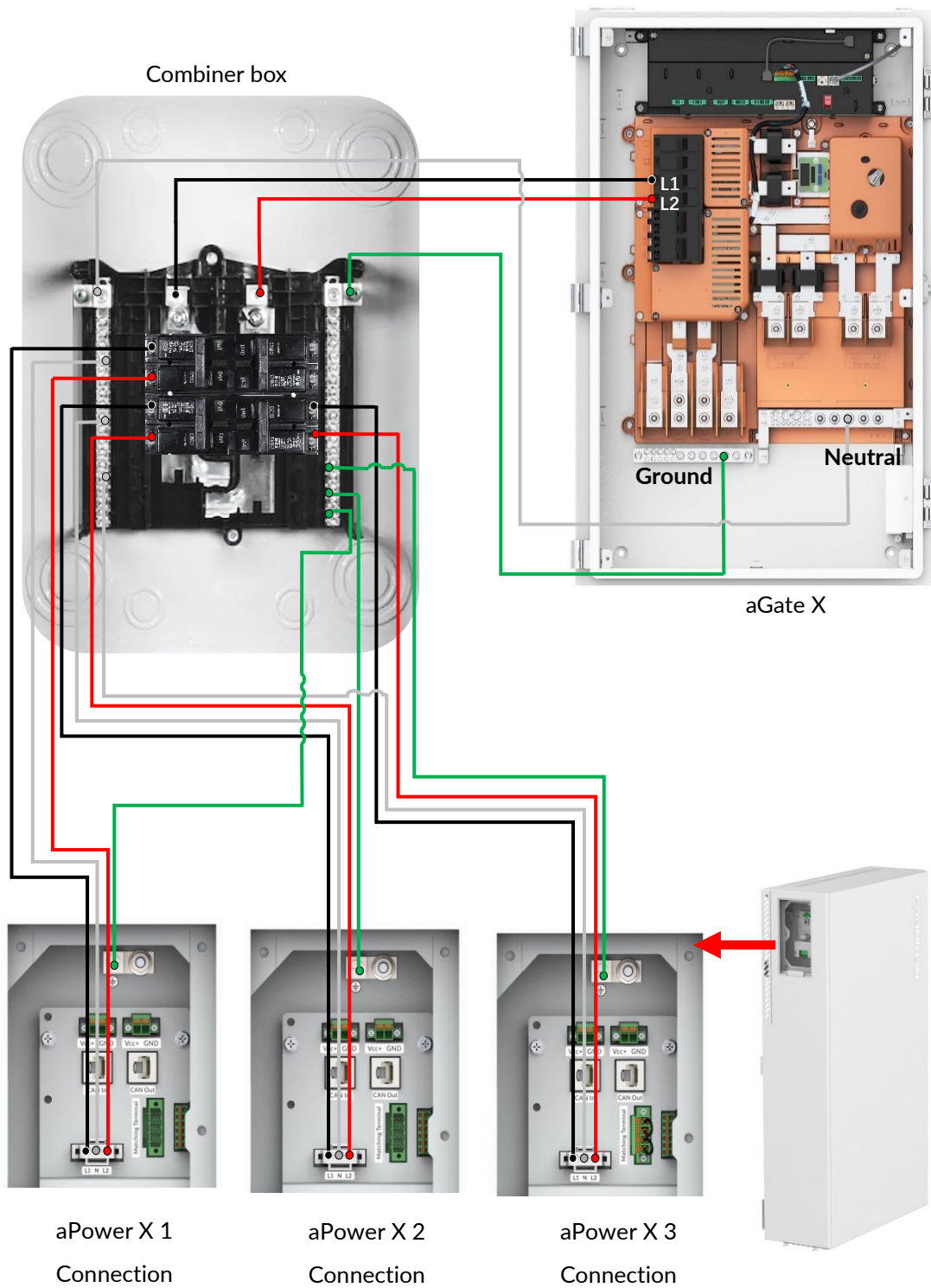
- If aluminum cable is used, the cable connectors need to be treated using antioxidant.
- If signal exchange is needed between the generator and the aGate X, please refer to the generator’s manual.




- aPower X connections to the aGate X (One aPower X unit)



- aPower X Connections to the aGate X (2 to 3 aPower X units)



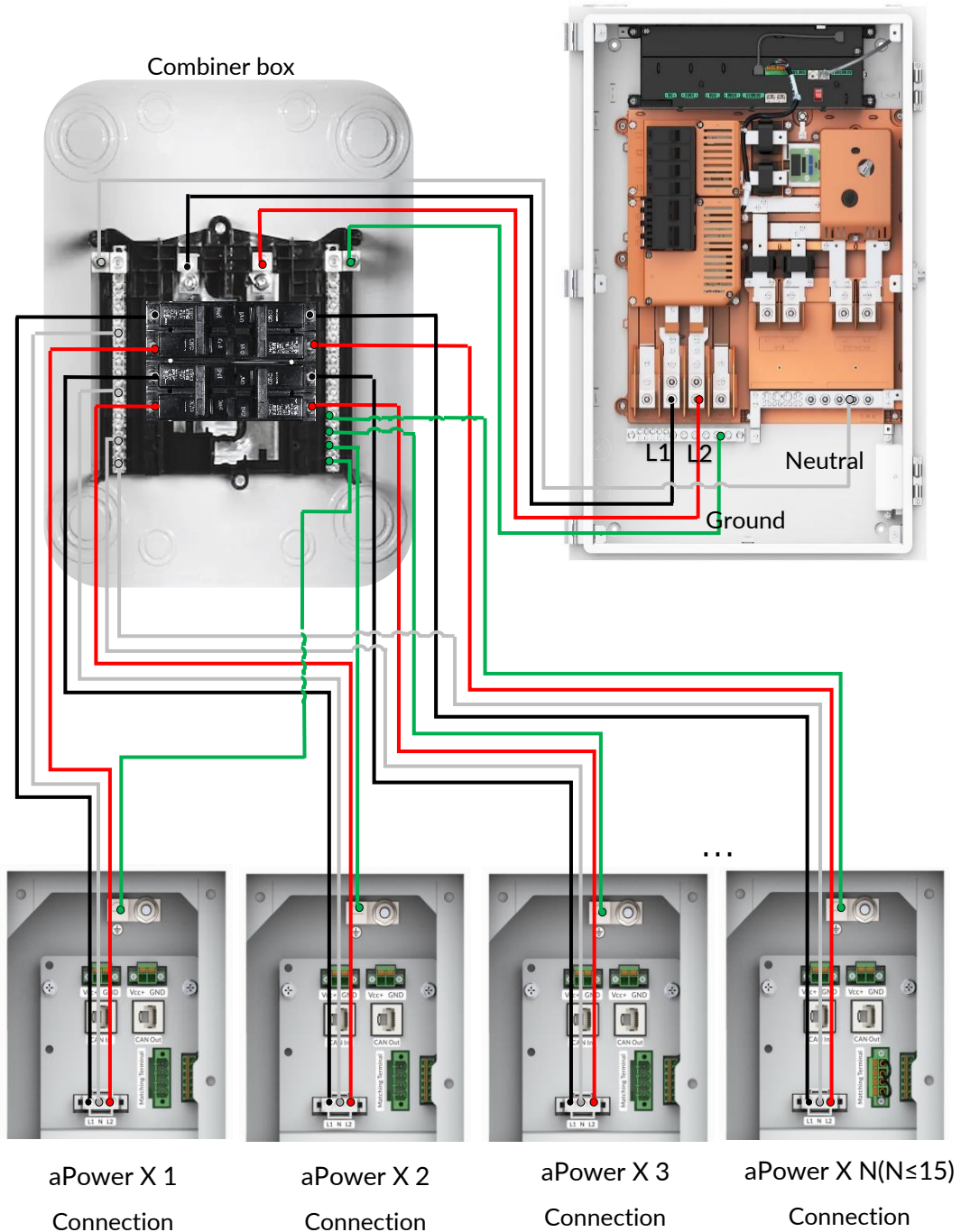
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**WARNING:**  
 The WAGO terminals of each aPower X can only be connected using 10AWG power wire.


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- Connect more than 3 aPower X units to the aGate X (Please consult FWH for technical support).

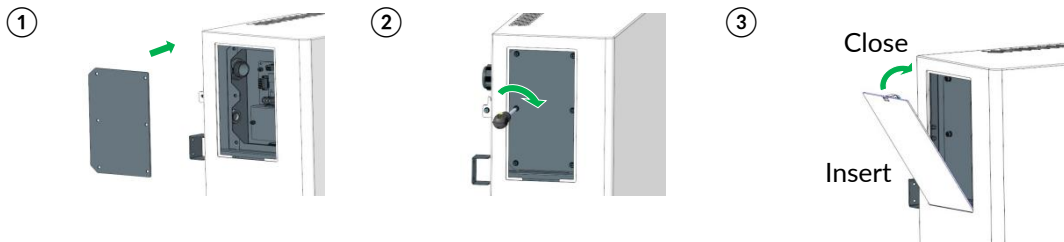
There are two (2) pairs of lugs on the backup load terminals of the aGate X. When connecting more than 3 aPower X units to the aGate X, use one (1) pair for the aPower X input from the combiner box and one (1) for the backup main panel output.



aPower X 1 Connection      aPower X 2 Connection      aPower X 3 Connection      aPower X N(N≤15) Connection

**WARNING:**  
 The WAGO terminals of each aPower X can only be connected using 10AWG power wire.

### Re-install the aPower X cover



### Install aPower X grilles

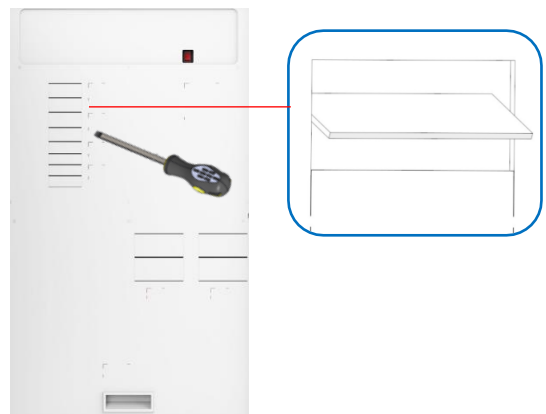


### aGate X Panel re-installation

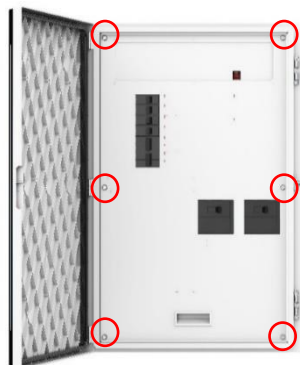
① Two installers will be needed to re-install the aGate X door.



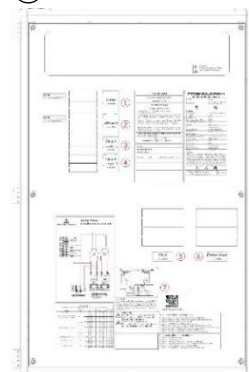
② Remove the knockouts.



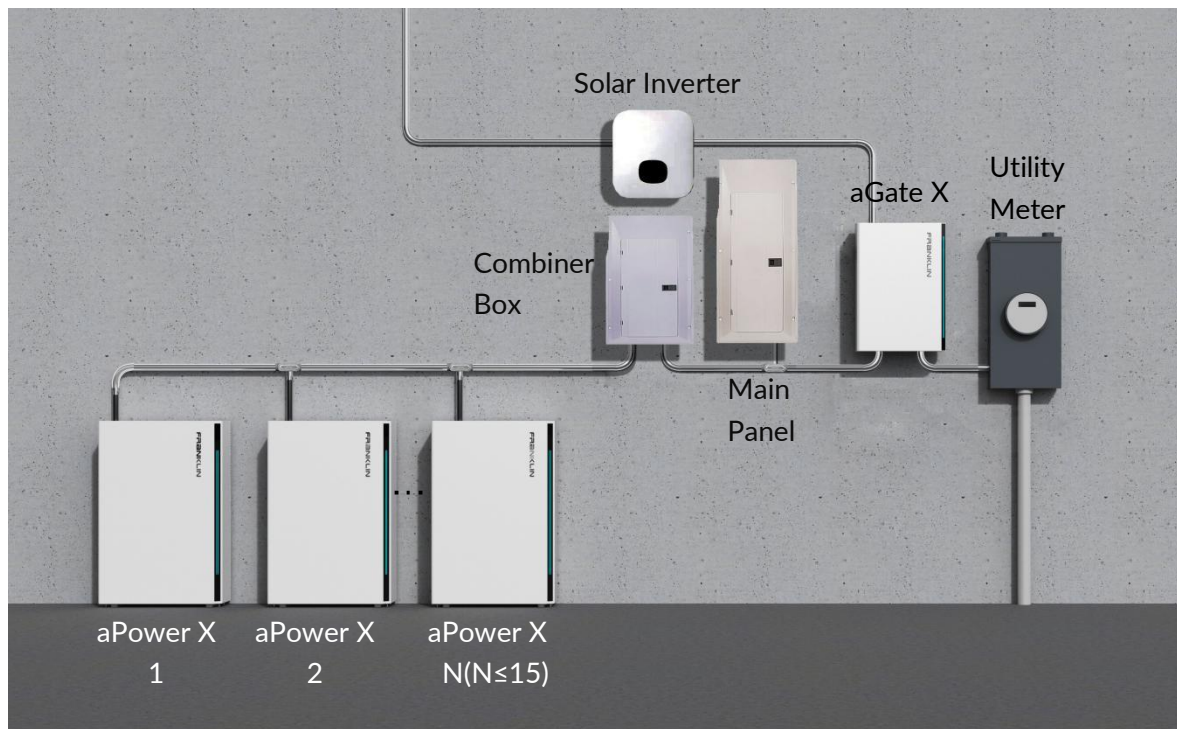
③ Install the inner panel.



④ Labels



## Conduit Diagram

**DANGER:**

Avoid drilling holes in the water pipes and cables buried in the wall.

**WARNING:**

Cover the aPower X top heat dissipation hole to protect from gravel dust during drilling.

**NOTE:**

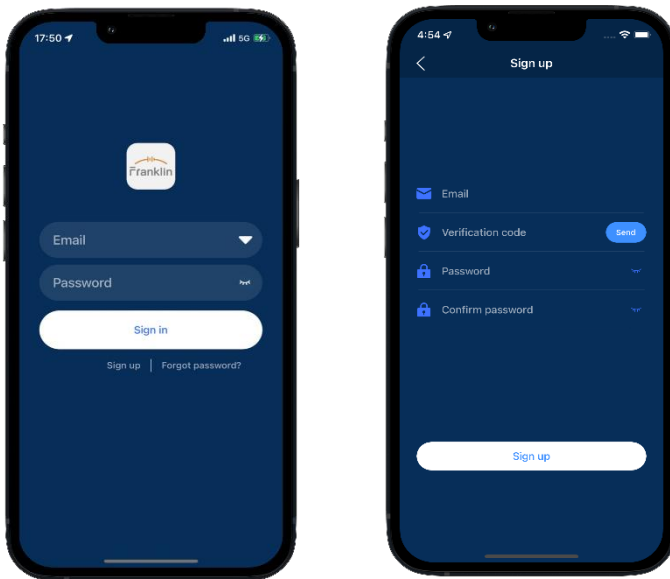
Install the communications cable and the power wires in the conduit to avoid accidental damage and communications failure. If the communications cable shares the same conduit as the power wires, please use Type 600V TC insulated network cables (with metal connectors).

## FHP System Activation with Smartphone App

Step 1: Search for FranklinWH and download the app.



Step 2: Homeowners sign up with assistance from installation service providers.



**NOTE:** The images provided in this document are for demonstration purposes only. Depending on product version, details may appear slightly different.

Step 3: Log in to the Installer Account.

- a. Installer signs into their account to set the FHP parameters.
- b. Bind homeowner email account to the FHP.

Step 4: Log into the Homeowner Account.

The main page of the FranklinWH App displays the real-time data of the FHP system under the **Now** module, where you can view the running status of various energy devices in your home.

